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Pavement Performance Monitoring System

Advanced System Design Service
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Volume I - Development

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Final Report

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16. Abstract

This study addresses the development approach and capabilities of a Pavement Performance Monitoring System (PPMS). The PPMS is a management tool to provide guidance towards future R&D efforts, establish R&D priorities, analyze pavement performance, identify potential causal factors, and develop statistics of airport pavements performance. The PPMS is developed in the micro-computer environment (IBM compatible) using PC/FOCUS as the DBMS. Different report output formats and their applicability are described in this report. An automated database of airport pavements performance indicators, materials specifications, design methods, traffic loadings, and environmental conditions was developed based on limited data collected during this study for selected pavements. The problems of data availability, data accuracy, and amount of data required to evaluate the effectiveness of FAA design guidelines and construction specifications are highlighted. For exercising full capability of PPMS, recommendations are made with regard to additional data collection and system hardware requirements for future enhancements.

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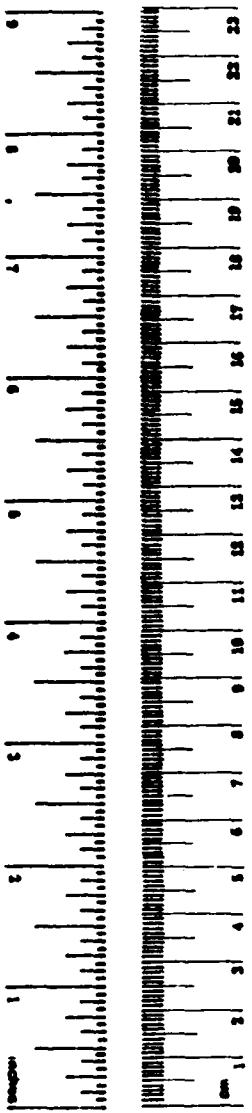
METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

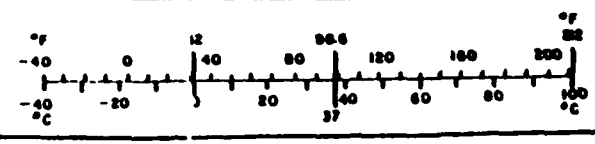
Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
in	inches	*2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
	AREA			
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
	MASS (weight)			
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
	VOLUME			
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
	TEMPERATURE (exact)			
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

*1 in = 2.54 (exactly). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures, Price $2.25, SD Catalog No. C13.10:286.



Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
	AREA			
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
	MASS (weight)			
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
	VOLUME			
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
	TEMPERATURE (exact)			
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



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1.0 Introduction

1.1 Background

Pavement performance monitoring and evaluation provide essential inputs for the overall management of airport pavements throughout their service life. Pavement performance is a measure of the degree to which the pavement meets the functional requirements under varying conditions of loading, weather, environment, and maintenance. There are a number of traditional and state-of-the-art inspection and testing procedures for evaluating the structural integrity and surface condition of pavements, such as the Pavement Condition Index (PCI) method of evaluation, non-destructive deflection testing, analysis of sample pavement cores, and Ground Penetration Radar (GPR) testing. The PCI method of evaluation developed by the U.S. Army Construction Engineering Research Laboratory (USA - CERL) provides techniques for assessing the present condition of airport pavement, for making comparisons of design predictions to actual performance, and for making predictions as to the remaining life of a pavement.[1] These procedures have gained wide-spread acceptance for rating airfield pavements and have been issued by the Federal Aviation Administration (FAA) in Advisory Circular AC 150/5380-6[2]. Regarding pavement design standards, material specifications, and construction procedures, the FAA provides guidelines through its Advisory Circulars AC 150/5320-6C[3] and AC 150/5370-10[4]. These guidelines are the result of years of field experience and continued research and development (R&D) efforts.

Over the years, the airport pavement community has adhered to these guidelines, especially airport constructions funded under the Airport Development Aid Program (ADAP). However, adequate feedback on the performance of pavements designed according to these standards has been lacking. The FAA requires such data to ascertain or introduce necessary changes in the guidelines, standards, and specifications provided in the Advisory Circulars. There have been attempts by field personnel to report on the performance of pavements; however, these efforts have not been systematic due to changes in personnel, changes in priorities, or insufficient staff. The FAA design guidelines require periodic updating because of increases in traffic loadings and their diversity, depletion of the supply of high quality aggregate sources, older pavements, and availability of new materials.

This study was initiated based on the need for an automated database tool useful for performing meaningful analysis and efficiently storing pavement performance indicators, pavement design, construction, and materials data. Among the existing Pavement Maintenance Management Systems, the Micro PAVER System has capabilities in the areas of pavement network inventory, determining maintenance and rehabilitation needs, budget planning, and economic analysis[5]. However, the proposed database addresses specific data needs and its manipulation to identify single or combinations of variables for the purposes of identifying commonalities of performance indicators.

1.2 Objective

The objective of this effort was to develop an automated database of airport pavement performance indicators and materials specifications which would enable the FAA to direct its pavement design research and development resources with greater efficiency. The objective of this report is to introduce the development approach of the Pavement Performance Monitoring System (PPMS) and its salient features, the data types incorporated into the database, and illustrate analytical capabilities of the system. The use of PPMS as a tool for providing guidance towards future R&D efforts, establishing R&D priorities, analyzing pavement performance and potential causal factors, and developing statistics of airport pavements performance under different climatic conditions is discussed in this report.

1.3 Scope

The scope of this study included data collection for a representative number of rigid and flexible pavement features at about 25 civil airports, airport pavements performance data analysis, and development of an automated database including applications software. Other specific tasks included providing recommendations on the current effectiveness of FAA criteria based on pavement performance data analysis and review of DOT computer facilities for PPMS installation. The study covered a period of approximately three and a half years starting in August 1985.

During the execution of this study, primary emphasis was placed on the development of the tool for evaluating most frequently occurring distress manifestations, identifying their principal causal variables, and identifying commonalities through the use of menus. The quanity of data

collected was de-emphasized with the thought that once the tool was developed, additional data could be collected as more funds become available. The database design issues such as data fields and their definition, potential data interdependencies for developing cause and effect relationships, and scope for future enhancements were addressed.

1.4 Database Development Approach

The development and implementation of the database was initially proposed to be on DOT computer facilities. The DOT computer facilities include a DGMV 8000 System at the FAA Data Processing Center and an AMDAHL 470V/7A at the Transportation Computer Center (TCC). These facilities were assessed based on user and functional requirements and implementation of the database for future enhancements. Due to certain limitations of accessibility and availability of these systems when required, together with a lack of control over use of these resources, a decision was made to develop the pavement performance monitoring database in a totally microcomputer-based environment. A commercial off-the-shelf database management system (DBMS) or the database manager was proposed because of financial/time constraints under the current scope and approved funds for this study. Customized software development for the defined user applications required significant time and manpower which could not be met with the funds allocated to the project.

The capabilities of various available packages such as PC-FOCUS, ORACLE, DBASE III PLUS, RBASE 5000, KMAN/2, and INFO were reviewed and evaluated. PC-FOCUS was selected as the DBMS for Pavement Performance Monitoring System based on user requirements of future software enhancements, upward compatibility to existing DOT mainframes, PC networking, and statistical and graphic capabilities. After establishing the DBMS for PPMS, the data elements, data files, database structure, and customized reports were defined and implemented.

Section 2 of this report summarizes the data collection efforts and pavement data types incorporated into the database. Database user community, data input form, pavement data flow, PPMS system configuration, and reports generation are discussed in Section 3. Section 4 presents details of reports, pavement performance analysis, and results. The conclusions based on analysis and recommendations are provided in Section 5.

2.0 Airport Pavement Data and Collection Efforts

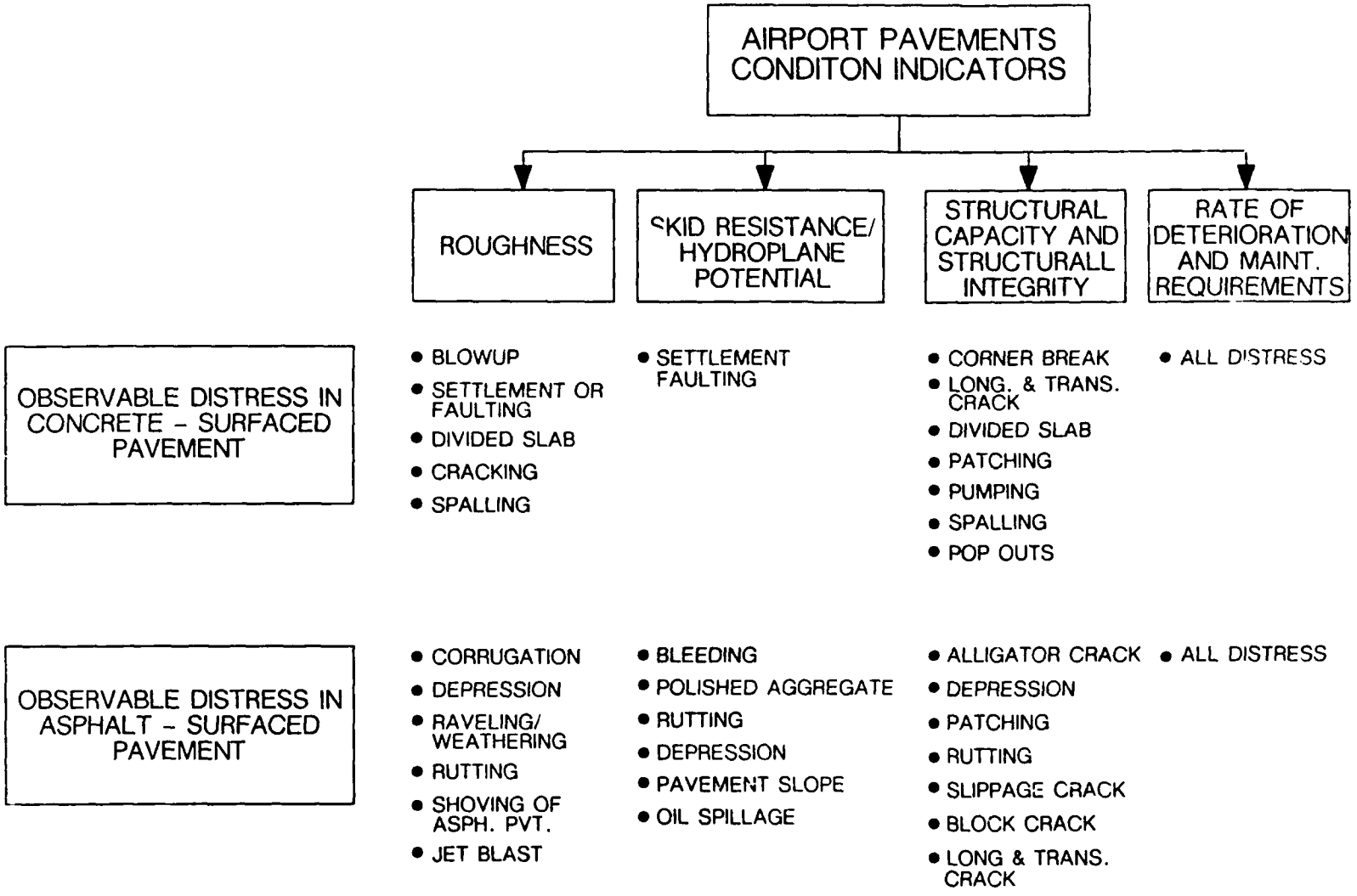
The major data categories in the database include performance indicators, design, construction, maintenance, and in-service conditions with respect to traffic and climatic conditions. These are the key variables which affect pavement's performance. In accordance with guidelines provided by the FAA, the data was developed from existing records of subgrade condition, materials test results, design drawings, and construction practices carried out during the time of installation of pavements and direct physical observations during site visits. Performance indicators/distress data are documented from the results of the PCI System of evaluation. The details of each of the data categories in terms of sources, scope, and their availability, are discussed in the following sections.

2.1 Major Pavement Data Categories

2.1.1 Pavement Performance Indicators

The PCI is a rating of an existing pavement's surface condition and measures functional performance with implications of structural performance. Factors which affect the pavement condition include structural integrity, capacity, roughness, skid resistance, rate of deterioration and maintenance. Certain distress types such as cracking, raveling, weathering, polished aggregates, scaling, etc., may not result in decreased structural capacity but may restrict functional usage. On the other hand, distress types such as faulting (settlement), rutting, pumping, etc., reflect a structurally deficient pavement and reduce the functional desirability. Figure 2-1 illustrates the observable distress types in airport pavements and their relation to pavement condition indicators[6].

The distress data in terms of density and severity levels are documented in the field based on the guidance provided in the Airport Pavement Distress Identification Manual [7]. Table 2-1 presents briefly the listing of potential causal factors/variables which lead to such distresses based on the information presented in the Pavement Distress Identification Manual. The relevant data fields corresponding to each distress type which are incorporated into the database are also listed in Table 2-1.



OBSERVABLE DISTRESS IN PAVEMENTS AND CONDITON INDICATORS

FIGURE 2-1

Table 2-1 DISTRESSES AND POTENTIAL CAUSAL FACTORS

DISTRESS TYPE	POTENTIAL CAUSAL FACTORS	RELEVANT PAVEMENT DATA FIELDS
Alligator cracking	Repeated traffic loadings	Aircraft types, design aircraft, annual aircraft operations, max. take-off (T/O) weight
Bleeding	High temperatures, excessive amounts of asphaltic cement or tars in the mix	Tmax, construction specifications
Block cracking	Temperature cycling	Maximum Temperature (Tmax) Minimum Temperature (Tmin)
Corrugation	Traffic loading, unstable pavement surface	Annual aircraft operations, construction specifications
Depression	Settlement of the foundation soil; load	Construction specifications, soil type
Jet blast erosion	Burning of bituminous binder	Jet traffic operations
Joint reflection cracking	Movement of PCC slab beneath asphaltic concrete surface because of thermal and moisture changes	Tmax, Tmin, precipitation frost penetration
Longitudinal and transverse cracking/diagonal cracks	Poorly constructed paving lane joint, shrinkage of AC surface due to low temperatures reflective cracks, traffic loadings, curling stresses	Construction specifications, Tmin, aircraft operations, Tmax
Oil spillage	Spilling of oil, fuel, or other solvents	Construction specifications
Patching and utility cutpatch	Load/climate/other	Construction specifications
Polished aggregate	Repeated traffic loadings	Annual aircraft operations
Ravelling and weathering	Climatic conditions, moisture	Tmax, Tmin, total precipitation, frost penetration
Rutting	Deformation in pavement layers due to traffic loads or consolidation	Traffic operations, construction specifications, precipitation

Table 2-1 DISTRESSES AND POTENTIAL CAUSAL FACTORS (Concluded)

DISTRESS TYPE	POTENTIAL CAUSAL FACTORS	RELEVANT PAVEMENT DATA FIELDS
Shoving	Opening up of joints, climate	Construction specifications, Tmax
Slippage cracking	Deformation of pavement surface by braking or turning wheels	Traffic operations, construction specifications
Swell	Frost action in subgrade or by swelling soil	Frost penetration, soil type, construction specifications
Blow up	Hot weather	Tmax, construction specifications
Corner break	Load repitition combined with loss of support and curling stresses	Traffic operations, construction specifications
"D" cracking	Freeze-thaw cycles	Tmax, Tmin, frost penetration
Joint seal damage	Water seepage, climate	Total precipitation, construction specifications, joint fillers
Popouts	Freeze-thaw cycles	Construction specifications, Tmax, Tmin, frost action
Pumping	Traffic loadings/deflection of slab, moisture	Aircraft operations joint sealant
Scaling, map cracking, and crazing	Overfinishing of concrete, climate	Construction specifications, Tmax, Tmin
Settlement or faulting	Upheaval or consolidation	Construction specifications
Shattered slab/intersecting cracks	Overloading/inadequate support, moisture	Design aircraft, traffic operations, construction specifications
Shrinkage cracks	Setting and curing of concrete, climate	Construction specifications
Spalling (joints)	Traffic loading/infiltration of incompressible materials	Traffic operations, construction specifications
Spalling (corner)	Traffic loadings, climate	Aircraft operations, design aircraft, Tmax, Tmin

2.1.2 Traffic Loadings

A pavement is designed to withstand a particular traffic loading. The using aircraft compared to the design aircraft tells if the pavement is being used at design capacity. Since the traffic is a mixture of a variety of aircraft having different landing gear types and different weights, the effects of all traffic must be accounted for in terms of the design aircraft. The gear type and configuration dictate how the aircraft weight is distributed to the pavement and determine pavement response to aircraft loadings.

The relevant traffic loadings data items include, aircraft types, frequency of operations, and pavement facilities used. Sources for such data items are FAA Air Traffic Activity Reports, airport operations personnel, airlines that operate at the airport, Airport Master Record (FAA Form 5010-1), Terminal Area Forecasts, and Airport Activity Statistics.

2.1.3 Climatic Data and Environmental Factors

Extreme temperature changes, precipitation, and freeze-thaw cycles affect pavement performance with time. Local geographical conditions such as soil type, water table, and surface and subsurface drainage conditions also affect pavement performance. Typically, expansive soil subgrades exhibit volume changes with variation in moisture condition. These changes result in differential movement of airport pavements resting on these soils, causing surface roughness and cracking [8].

The design of adequate drainage is important for achieving optimum performance of all paved areas at the airport site. The most dangerous consequences of inadequate drainage systems are saturation of the subgrade and subbase, damage to slopes by erosion, loss of load bearing capacity of paved surfaces, and excessive ponding of water [9].

Most climatic effects such as protection of the pavement during curing, laydown temperatures, etc., are handled by construction specifications and local construction experience. The degree of frost protection required is dictated by the soil conditions. The National Oceanic Atmospheric Administration (NOAA) publications provide a good source of climatic data especially the temperature variations.

2.1.4 Pavement Design Data

The advisory circular AC 150/5320-6C provides guidance on the structural design and evaluation of airport pavements and it supersedes earlier publications AC 150/5320-6B and AC 150/5320-6A. The updated version covers pavement design for airports serving aircraft with gross weights of 30,000 pounds or more. It also includes a method to extrapolate the thickness required for pavements receiving up to 200,000 annual departures. Pavements designed in accordance with these standards are intended to provide a structural life of 20 years that is free of major maintenance if no major changes in forecast traffic are encountered. Other pavement design procedures used in the field are developed by the Asphalt Institute and the Portland Cement Association. In accordance with the FAA guidelines, all pavement designs are summarized in FAA Form 5100-1, which is considered to be part of the Engineer's Report.

Other than traffic loading, design aircraft, gro weights, factors such as subgrade modulus K, California Bearing Ratio (CBR) Value, depth of c mpaction, and liquid limit are also taken into consideration for pavement design and determine the thickness requirements of subbase, base, and surface.

2.1.5 Pavement Construction Specifications and Materials Data

The Advisory Circular AC 150/5370-10 provides construction standards of civil airports. Since it is not feasible to provide construction specifications that can be applied to all geographical areas of the United States, the standards in this advisory circular are used as a guide in developing specifications for individual projects. The materials that compose a pavement and the methods by which these materials are constructed have a major influence on how well a pavement performs. Certain unique distress types are characteristic to particular materials. Certain distress conditions occur as the result of particular construction practices. The FAA airports field representatives designated by regional offices have the authority to approve modifications to standards contained in the Advisory Circular if the modifications provide acceptable levels of safety, economy, durability, and workmanship, and are necessary to meet local conditions.

The construction specifications incorporated in the database are as follows:

P-154	SUBBASE COURSE
P-155	*LIME-TREATED SUBGRADE*
P-401	BITUMINOUS PAVEMENTS (BITUMINOUS SURFACE COURSE)
P-206	DRY OR WATER BOUND MACADAM BASE COURSE
P-208	AGGREGATE BASE COURSE
P-209	CRUSHED AGGREGATE BASE COURSE
P-210	CALICHE BASE COURSE
P-211	LIME ROCK BASE COURSE
P-212	SHELL BASE COURSE
P-213	SAND CLAY BASE COURSE
P-214	PENETRATION MACADAM BASE COURSE
P-215	COLD LAID BITUMINOUS BASE COURSE
P-216	*MIXED IN-PLACE BASE COURSE*
P-301	SOIL-CEMENT BASE COURSE
P-304	CEMENT-TREATED BASE COURSE
P-402	POROUS FRICTION COURSE
P-408	BLENDED NATURAL LIMESTONE ROCK ASPHALT AND SAND BITUMINOUS SURFACE COURSE
P-501	PORTLAND CEMENT CONCRETE PAVEMENT
P-605	JOINT SEALING FILLER

These specifications provide details about materials, construction methods, finishing, and curing procedures.

2.1.6 Maintenance and Repair (M&R) Data

Maintenance plays an important role in pavement serviceability and is crucial to efficient airport operations. The present condition of a pavement relates to the maintenance attention it has received. Also, the degree of maintenance that has been required to maintain a serviceable condition would indicate how well the pavement has performed. For concrete pavements, the examples of maintenance methods used in the field include patching, slab replacement, joint scaling, and slab jacking. Crack filling, fog seal, slurry seal, surface leveling, and patching are some of the methods used for maintaining and repairing asphaltic pavements. A history of the maintenance and its performance provides invaluable information on the effectiveness of particular M&R alternative on a specific pavement feature.

2.1.7 Pavements Inventory Data

It is important and desirable that the database has an inventory of all pavements (runways, taxiways, and apron areas) for a particular airport site. Relevant data items include identification of different pavement features, and their construction records. Airport facilities directory and

Airport Master Record provide some information on runways. Other sources for such types of data are the pavement feature maps developed by the State DOTs who are implementing the PCI System of performance evaluation.

2.2 Data Collection Efforts

The data collection effort was initiated by making contacts at all the FAA Regional Divsions Offices. Based on the responses received, field visits for visual inspection of pavements were planned for the Southern, Great Lakes, Western-Pacific, and Northwast Mountain Regions. Follow-up efforts by telephone and letters were made on a continuing basis to obtain additional data and fill the data gaps. In other regions, individual airports were contacted seeking their cooperation and participation since no response was received from their Regional offices.

The selection of the airport sites that could be visited in the Southern, Great Lakes, Western-Pacific, and Northwest Mountain Regions was made in a non-random manner, based on the suggestions provided by the contact persons at the regional/Airports District Office (ADO) level and their input on data availability for the recommended pavements. The selected airport sites are as follows:

Southern Region

The Willian B. Hartsfield Atlanta International Airport, Georgia
Greer/Greenville-Spartanburg Airport, South Carolina
Charlotte/Douglas International Airport, North Carolina

Great Lakes Region

Pekin Municipal Airport, Illinois
Mount Hawley Auxiliary Airport (Peoria), Illinois
Indianapolis International Airport, Indiana

Western Pacific Region

Phoenix Sky Harbor International Airport, Arizona
San Diego International Airport--Lindbergh Field, California
Long Beach Airport--Daugherty Field, California

Northwest Mountain Region

Stapleton International Airport, Denver, Colorado
Durango-La Plata County Airport, Durango, Colorado
Cheyenne Airport, Wyoming

The following steps were taken for the data collection:

- Development of pavement data form to act as a guide,
- Assessment of data availability by establishing contacts at Regional Office/Airports District Office level,
- Selection of pavements based on feedback on data availability, and
- Field visits.

Efforts were made to collect as much data as possible under each of the data categories as discussed in Seciton 2.1 for the selcted pavements/pavement features. Data on original pavement features operating under different environments were more desirable in order to develop meaningful correlations and pavement performance evaluations.

2.2.1 Field Visits

Field visits were made to the airports listed in Table 2-2 for visual inspection of pavements.

A brief summary of the distress types observed on the pavements is presented below.

Runway 8L-26R/The William B. Hartsfield Atlanta International

No distress was evident on this pavement. However two modificaitons of the previous design used at this airport are significant. These are the elimination of keyed construction joints in the runway and taxiway, and taxiway construction lanes of 12.5, 25, 25, 12.5 feet so configured to prevent heavy aircraft landing gear from riding on a construction joint.

Runway 3-21/Greer/Greenville-Spartanburg

This runway is somewhat unique in that the 500 foot ends are portland cement concrete and the center portion is asphaltic concrete. A 4-inch overlay was applied to the center protion in 1977. An inspection of the runway showed minor cracking of the Portland Cement Concrete (PCC) and low severity longitudinal construction joint cracks at the centerline.

Pavements Inspected During Field Visits
Table 2-2

REGION	VISIT DATES	AIRPORTS	PAVEMENT FACILITY
Southern Region-- Atlanta ADO	2/11-14/86	The William B. Hartsfield Atlanta Int'l.	Runway 8L-26R (PCC)
		Greer/Greenville-Spartanburg	Runway 3-21 (ASPH-GRVD)
		Charlotte/Douglas Int'l.	Runway 18R-36L (PCC)
Great Lakes Region-- Chicago ADO	5/5-9/86	Pekin Municipal	Runway 09-27 (ASPH) and Taxiways/Aprons
		Mount Hawley Auxiliary (Peoria)	Runway 17-35 (ASPH) and Taxiways/Aprons
		Indianapolis Int'l.	Runway 04L-22R (ASPH-GRVD) Runway 13-31 (ASPH-GRVD)
Northwest Mountain Region Denver ADO	6/2-4/86	Denver Stapleton Int'l.	Runway 17L-35R (PCC)
		Cheyenne	Runway 12-30 (ASPH)
		Durango La Plata County	Runway 2-20 (ASPH)
Western Pacific Region Los Angeles ADO	6/12-13/86	San Diego Int'l.	Runway 9-27 (ASPH)
		Long Beach	Runway 12-30 (ASPH)

Runway 18R-36L Charlotte-Douglas International

A visual inspection showed some cracking of the centerline keyed joint (joint spalling) at the departure end (36L) and some loose joint filler was noticed. The overall condition was excellent.

All Pavements/Pekin and Peoria

These are small general aviation fields and the FAA criteria are used in pavement construction. The most prevalent type of distress observed at these flexible pavements were low and medium severity level transverse cracking and opening of longitudinal construction joints.

Runways 04L-22R and 13-31/Indianapolis International

The most noticeable distress type on these pavements was reflection cracking. Because of heavy traffic the runways could not be made available for visual inspection.

Runway 17L-35R/Denver-Stapleton International

This runway was constructed in 1975. A detailed inspection of the north end revealed only popouts as a distress which were caused by sandstone in the aggregate. A 1982 PCI survey reported low severity corner breaks, joint seal damage, shrinkage cracks and joint spalls and a PCI of 67. There was very little change since then according to the maintenance personnel.

Runway 12-30/Cheyenne

The surface is a porous friction course (PFC) constructed over a stress absorbing membrane (Petromat). No distress was obseved.

Runway 2-20/Durango

The surface of this runway is a 10 year old PFC showing practically no distress. Some polished aggregate was evident in the central portion, however, the most likely source of future problems was paint stripe cracking. The probable cause for such cracking appears to be differential thermal expansion or a chemical reaction.

Runway 9-27/San Diego International

Runway 9-27 was originally of 12" PCC constructed in 1944 and overlayed with 6" to 8" of asphalt in 1980. The original PCC was strengthened by mud-jacking and joint repair prior to overlay. The resulting pavement is in excellent condition with no signs of distress or reflective cracking. Paint stripe cracking is a potential observable distress.

Runway 12-30/Long Beach Airport

Only paint stripe cracking was observed.

2.2.2 Pavements Data from State DOTs

Computer runs of PCI and pavement history intormation were obtained for the following airports:

Illinois DOT, Springfield:	Springfield, Waukegan, Peoria, Alton, Cairo, Rockford, Bloomington, and Champaign
Wisconsin DOT, Madison:	Milwaukee, Madison, Green Bay, La Cross Municipal, and Central Wisconsin

Design reports for Runway 11-29 at Bloomington, Runway 12-30 at Peoria, Runway 12-30 at Springfield, and Taxiway A and Runway 23 at Waukegan were also collected from the Crawford, Murphy and Tilley, an A&E firm, in Illinois.

2.3 Pavements Data Summary

The summary of the data gathered during this study for different airport pavements is shown in Table 2-3. Data on high traffic volume pavements evaluated by the U.S. Army Engineer Waterways Experiment Station under a separate study sponsored by the FAA is included in the database[10]. The capabilities of PPMS were exercised using this data set. The principal sources of the data set were: (1) records and reports maintained by Airport Engineering and Maintenance Offices, (2) PCI Surveys conducted by state DOTs, (3) visual inspection of pavements by EER personnel, and (4) other FAA-sponsored studies and published documents.

Table 2-3 Summary of Pavement Data Collected

AIRPORTS	FACILITY	CLIMATE	TRAFFIC	DESIGN	CONSTRUCTION	SPECS	INSPECTION	CONDITION	PCI	MAINTENANCE
HIGH TRAFFIC VOLUME STUDY										
1 Atlanta, GA	TWs E L M	X	X		X				X	
2 Dallas-Fort Worth, TX	TWs F G J K	X	X							
3 Fort Lauderdale, FL	9L-27R TWs A F	X	X		X				X	
4 JFK, NY	TWs J K O P	X	X		X				X	
5 Phoenix, AZ	TWs B C	X	X		X				X	
STATE DOT'S										
6 Alton, IL	ALL				X				X	
7 Bloomington, IL	ALL 11-29			X	X				X	
8 Cairo, IL	ALL				X				X	
9 Central Wisconsin	ALL				X				X	
10 Champaign, IL	ALL				X				X	
11 Green Bay, WI	All				X				X	
12 La Crosse, WI	ALL				X				X	
13 Madison, WI	ALL				X				X	
14 Milwaukee, WI	ALL				X				X	
15 Peoria, IL	12-30			X	X	X			X	
16 Rockford, IL	ALL				X				X	
17 Springfield, IL	ALL RW 12-30			X	X X				X	
18 Waukegan, IL	TW A RW 23			X X	X X				X	

Table 2-3 Summary of Pavement Data Collected (Concluded)

AIRPORTS	FACILITY	CLIMATE	TRAFFIC	DESIGN	CONSTRUCTION	SPECS	INSPECTION	CONDITION	PCI	MAINTENANCE
EER FIELD VISITS										
19 Atlanta, GA	8L-26R	X	X	X	X	X		X		
20 Charlotte, NC	18R-36L	X	X	X	X	X	X	X		
21 Cheyenne, WY	RW 12-30	X	X	X	X	X	X	X		
22 Columbia, SC	5-23			X	X	X				
23 Denver, CO	RW 17L-35R	X	X		X	X	X	X		
24 Dulles, VA	ALL RWs	X	X	X	X	X	X	X	X	
25 Durango, CO	RW 2-20	X	X	X	X	X	X	X		
26 Fort Wayne, IN	4-22			X	X	X				
27 Greenville, SC	3-21	X	X	X	X	X	X	X		
28 Indianapolis, IN	4-22	X	X				X	X		
29 Long Beach, CA	RW 12-30	X	X	X	X	X	X	X		
30 Pekin, IL	ALL							X		X
31 Mount Hawley, (Peoria) IL	ALL							X		X
32 San Diego, CA	RW 9-27	X	X	X	X		X	X		

2.4 Data Availability and Problems Encountered

The responses received from the regions and the experience gained in the field indicated that information available from the ADO'S is very limited. Inspection of pavements which was formerly a routine function in the ADO has been almost eliminated. The newer pavements for which data such as design reports, specification and construction records are available, have not been in use long enough to exhibit any distress symptoms. Conversely, detailed data for older pavements are not available. In many cases the records on completed projects have been sent to the archives and are not easily traceable. The design reports for pavement projects are kept primarily by the Architect/Engineers Office involved in the design. The collection of construction data is particularly difficult because there is no single/central location to retain these records. Data on traffic loadings/history for a particular pavement section/feature was not available in the existing records. There are no specific records available for pavement maintenance. However, maintenance procedures outlined in FAA Advisory Circulars are generally followed in the field.

Based on the discussions with the contact persons at the ADO/Regional level, the following problem areas were identified:

- Lack of use of PCI System of evaluation for pavement performance.
- Lack of systematic method for reporting data-items relating to pavement history.
- Lack of single/central location for data storage and retrieval.
- Non-uniformity of methods and procedures for reporting performance data.

3.0 Pavement Performance Monitoring System (PPMS)

The PPMS provides its users with capabilities such as data storage and retrieval, pavement performance monitoring, tracking distress manifestations on pavement sections/features, comparative pavement performance analysis under different climatic conditions, and establishing commonalities among pavement performance indicators. The PPMS database incorporates all the relevant data items as discussed in Section 2.1.

3.1 System Configuration

The PPMS was developed in the micro-computer environment and implemented using PC/ FOCUS The system configuration is shown in Figure 3-1. The PPMS functional diagram is shown in Figure 3-2. As shown in the functional diagram, there are three major components of the PPMS. Data maintenance involves update, entry, and deletions of records through interactive and batch modes. The report generation component includes preparation of ad-hoc and auxiliary reports, analysis reports, and querying. The data base administration (DBA) function involves system maintenance, system enhancement, and system administrative procedures. These functions are discussed in detail in the Programmer's Guide for the Pavement Performance Monitoring System.

The PPMS hardware consists of an IBM PC/AT or compatible with at least a 20MB harddisk, 1.5 MB RAM, one floppy disk drive, a color monitor, and a printer. A modem will be necessary to communicate with the remote users. PC/FOCUS 3.1 and DOS 3.0 or higher is required to run the PPMS. Carbon Copy Plus or some other communication software package is required for remote access.

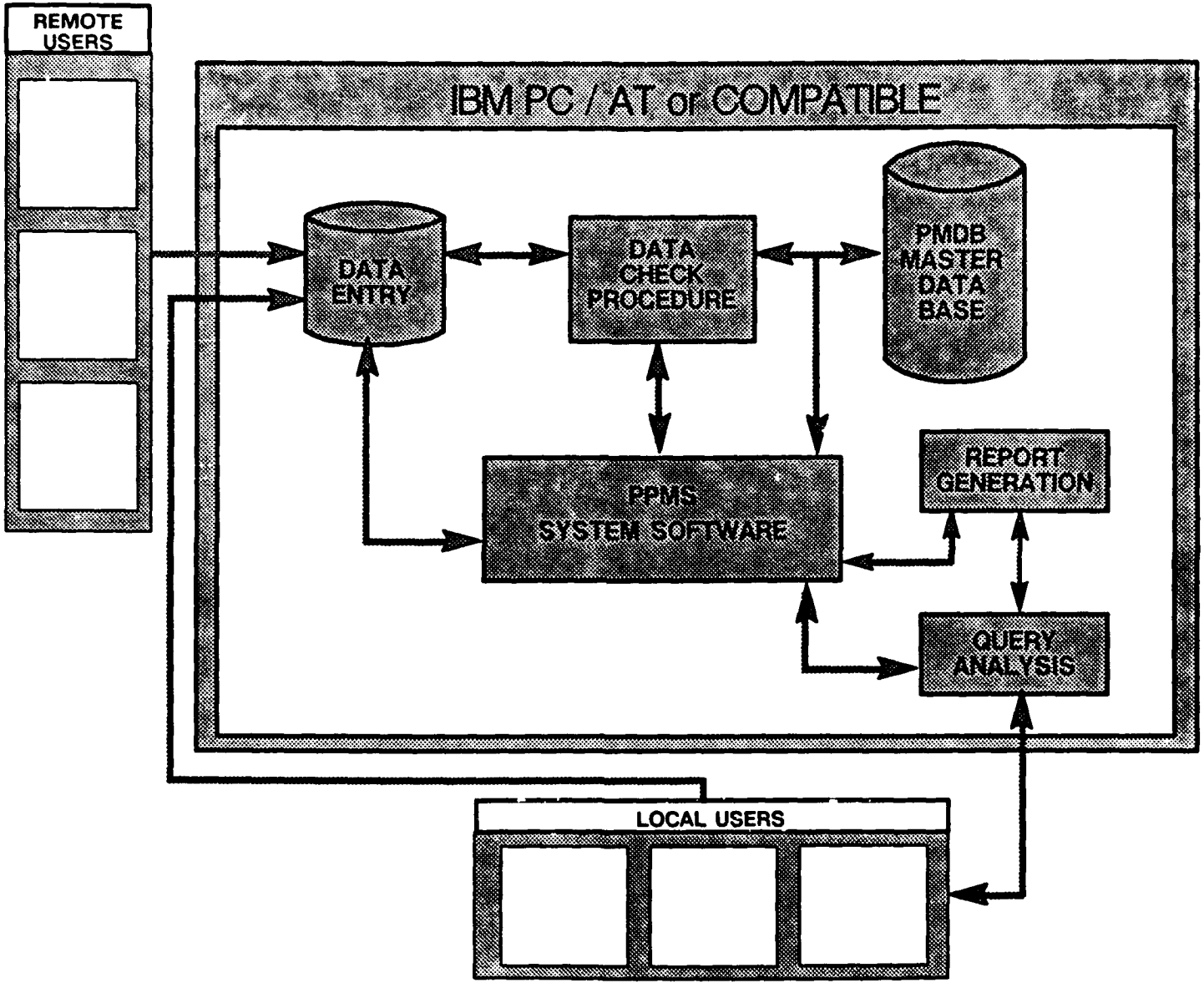


FIGURE 3-1 PPMS SYSTEM CONFIGURATION

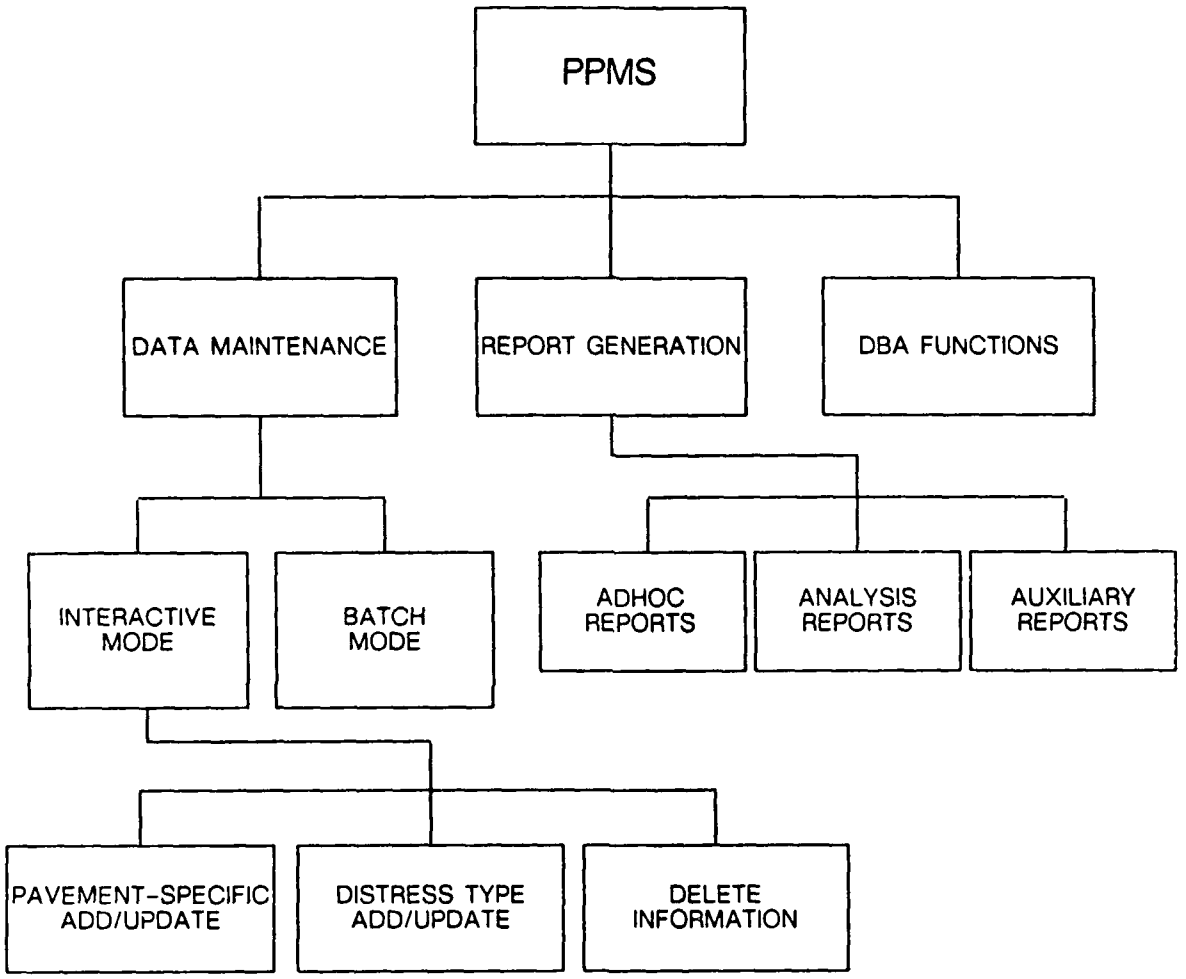


Figure 3-2 PPMS FUNCTIONAL DIAGRAM

3.2 PPMS Applications Software Development and Its Features

The software development and implementation for the PPMS was achieved by following these steps: requirements analysis, design, implementation, testing, documentation, and training and technical support. The fundamental technique used for the system design was the top-down structured design method. The system was divided into subsystems/modules, and the interfaces among the subsystems were identified. The PPMS system is divided into three major components, i.e., data maintenance, report generation, and the Database Administrator's (DBA) functions, as stated earlier in Section 3.1. Each of these components was then developed independently and integrated with the main system. During the system integration process, the necessary user interfaces such as menus and help screens were appended.

The modules designed in the design phase of the PPMS were implemented using the FOCUS command language, FOCUS Interactive Data Entry Language (FIDEL) and FOCUS Dialog Manager. Testing, debugging, and implementing were being done continuously, depending upon the changing needs and feedback on report formats and data access requirements from the users.

The PPMS documentation consists of a User's Manual and a Programmer's Guide. The Users' Manual is written for application users, with an emphasis on how to use the system while the Programmer's Guide is prepared for use primarily by the systems analyst or the Database Administrator. The Programmer's Guide addresses issues pertaining to system security, system maintenance, and batch processing. The FOCUS Users Manual and the Guide to Operations supplement the information in the PPMS Users Manual and the Programmer's Guide.

3.2.1 PPMS Features

The system has several features which make it user-friendly. The details of these features are discussed in the User's Manual and the Programmer's Guide. The salient points are presented here.

- **Menu-driven**

The menus developed for PPMS allow users to have meaningful dialogue and manipulate data based on required report formats.

- **Help**

On-line context-specific help is provided to assist the user. In the Data Maintenance section, help is available for each of the data items. Help screens include a brief description of the data item and possible alternatives. The user can activate the help feature at various levels for an explanation of the available alternatives during the report generation phase.

- **Validation**

Validation is necessary to ensure the validity and integrity of the data entered. Only validated data can be entered into the database. The system displays a message if there are any data items that are incorrect. The user may want to look at the corresponding help screens for the valid entries. If there is any type of mismatch (i.e., numeric, text), FOCUS prompts the user to correct it immediately. Two levels of validation are provided in PPMS: one provided by FOCUS and the other provided by the EER-written applications software for PPMS.

- **Security**

Database security is implemented at two levels: the user level and the Database Administrator level. The first level of security ensures that the user may use the system to enter data, update the information, and generate reports. To modify the database structure or to change the passwords, the user will need to enter his/her DBA password. The second level of security protects the system from unauthorized access to the system-level features. The DBA can add, delete, or change the passwords if necessary.

3.2.2 Analytical Capabilities

The PPMS can be used both as a Management Information System and as an analysis tool. Pavement engineers and analysts can manipulate data and develop reports through queries involving single or combinations of causal factors leading to a particular type of distress manifestation. The result of the analysis can be represented in tabular or graphic format. Frequency plots of most frequently occuring distress types can be developed for different regions, airports, or any other variable selected by the user. Analysts can perform comparative pavement performance statistics operating under different climatic conditions and thereby help establish trends. The

system is capable of generating standard as well as customized/ad-hoc reports as discussed in Section 4.

Based on such analysis, this tool will enable FAA personnel to effectively direct their research and development resources with greater efficiency. Current status of design methodologies, maintenance methods, and materials being used for a specific pavement feature at a given airport, can be retrieved quickly and will facilitate in making suitable recommendation to other field personnel.

3.3 Database User Community

Under the present configuration, two types of users, local users (FAA Headquarters personnel) and remote users (FAA field personnel, regional offices) are identified by the Pavement Performance Monitoring System (PPMS). The capabilities and limitations of the system for both types of users are described in the following sections.

3.3.1 Local Users

Local users will have access to all the features of the Pavement Performance Monitoring System such as data entry/update, report generation, and analysis. These access rights will, however, be determined by the Database Administrator (DBA). The DBA will be a local user and will be responsible for the system maintenance, system administrative functions, and system enhancements. Since PPMS is a single-user system, only one user can use the system at any given time. To ensure data integrity and maintenance, data entry and update should be restricted to one work station. Copies of the database can be used at different work stations for querying and analysis.

3.3.2 Remote Users

Field personnel are key to the PPMS because they provide the data for the system. The system will not be useful if quality data are not entered and updated periodically. The remote users can provide data in one of the three ways outlined below.

3.3.2.1 Hardcopy

The remote users can complete and send the data input forms to FAA headquarters. A local user at the headquarters will then enter the data interactively. This procedure is simple but very

time-consuming and increases the efforts of the local data entry operator. Since the local user will be entering the data interactively, he/she will validate the information while inputting the data.

3.3.2.2 Magnetic Media

The remote users can send data on floppy disks in ASCII format. The data files can be prepared by using commercially-available wordprocessing software packages, such as WordPerfect. Instructions are provided in the User's Manual to create data files using WordPerfect. For other packages, the user may create data files in a similar manner. The floppy disks containing the data files are sent to the DBA. The DBA can enter/update the information using the batch processing option for data maintenance. If there are discrepancies in the data, the DBA may consult the remote user for clarification.

3.3.2.3 Remote Access

The remote users can input data interactively by using a communication software such as Carbon Copy Plus. The users will have to configure the software and hardware to access the system at FAA headquarters. They also need to know how to use the PPMS and how to enter the data.

The remote data entry function can be very useful, but it has some drawbacks. This function requires training of field personnel and the necessary software and hardware. Another drawback is that while a remote user is using the system, local users cannot access the system. The remote data entry method is recommended for multi-user networked environments.

3.4 Pavement Data Flow

Data flow for PPMS involves data collection from various airports by field personnel, the completion of data input forms, the validation of data before entering it into the database, and the use of this database to query and analyze the data. A pictorial representation of this data flow is shown in Figure 3-3. The data input form is provided in Appendix A.

The local and remote users may enter and update information using one of the methods discussed in Section 3.3. The information will be validated prior to being entered into the database. If the user does not select the options provided in the Data Input Form, the system will

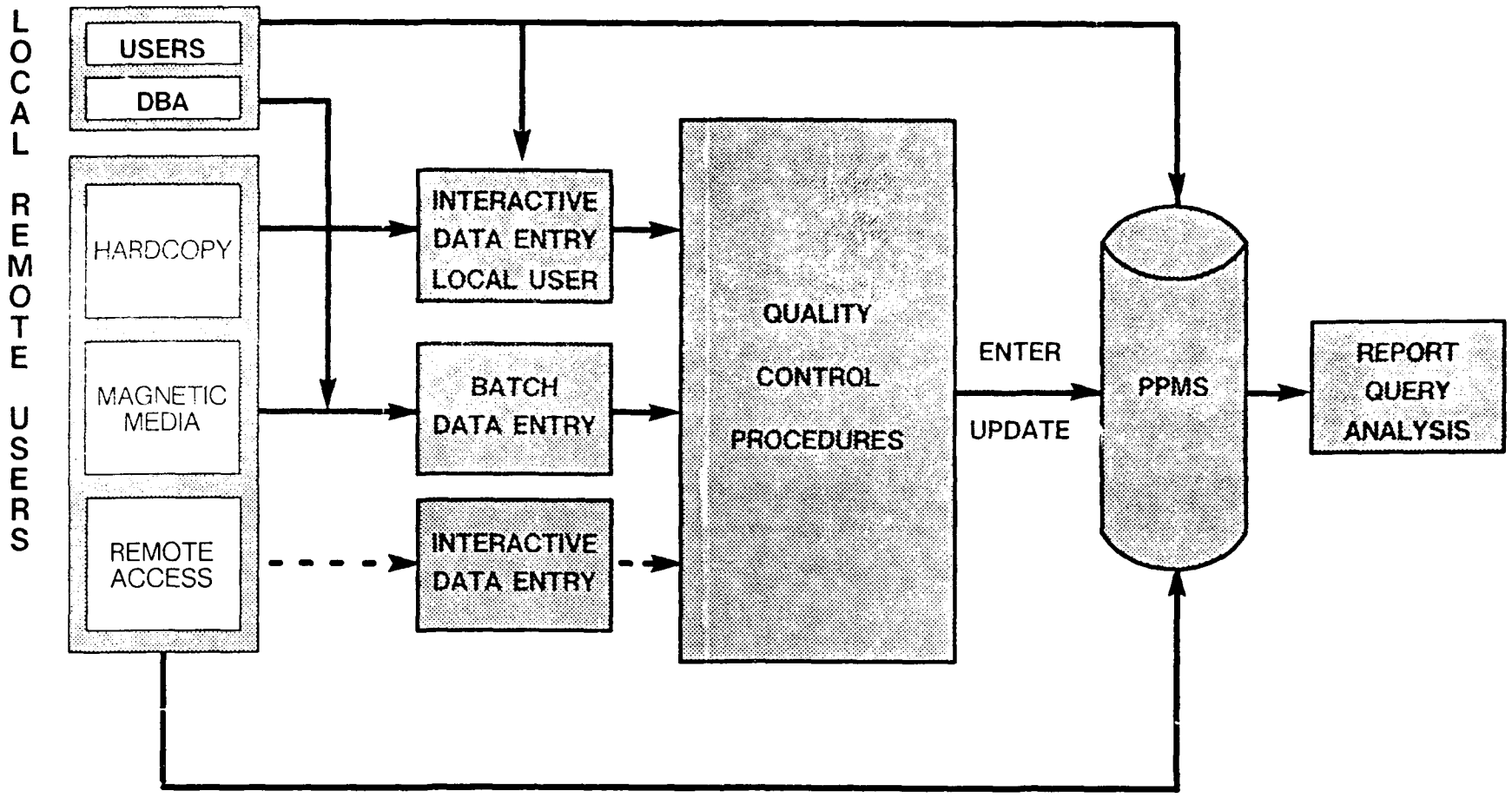


FIGURE 3-3 PAVEMENT DATA FLOW

either prompt the user or will log-in the message in the message file. The user will have to type in the correct value or modify the data file. Please refer to the Users' Manual and the Programmer's Guide for interactive and batch data entry instructions.

4.0 Pavement Performance Analysis

Due to the existing gaps in the design, specifications, and maintenance data collected during this study, only a preliminary analysis was performed. However, analysis approaches using the system capabilities for generating a variety of reports is discussed in this section. Each report can be customized by the user so that only the particular pavements of interest are included and the information is organized according to the user's needs. The User's Guide provides detailed step-by-step procedures to walk through the system and report generation cycle. Figure 4-1 illustrates a sequence of data manipulation for any typical report generation. The details of various reports and the sequence of steps are provided in the following sections.

The analyst can perform cause-and-effect analysis using the PPMS. For a particular distress type, the user will make a subset of the database by specifying a record selection criterion. The user can then perform the commonality analysis on the desired fields. If the frequency of occurrence for a particular value is significantly high, this suggests that variable is a possible causal factor.

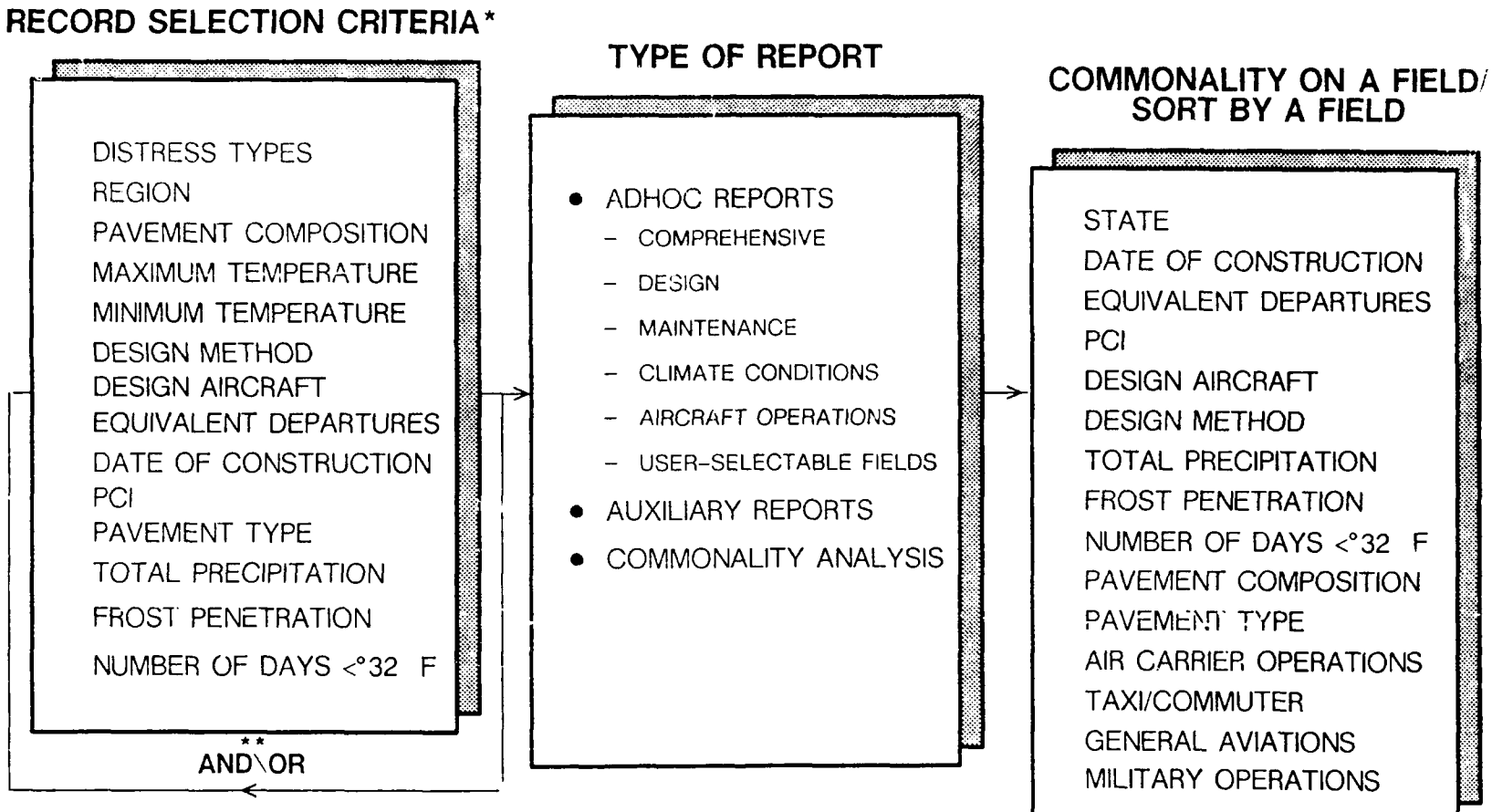
4.1 Reports From PPMS

4.1.1 Field Selection Criteria

The first stage in any report generation, is the selection of key fields or record selection criteria. If an analyst does not wish to specify a selection criterion, all the records in the database are considered for the reports and analysis. To specify a selection criterion, the analyst must identify a field. The analyst has options to select the possible values for that field or he/she is prompted to enter the value. For example, if distress type field is selected, the user has options to select from thirty distress types incorporated into the database. If longitudinal/transverse cracking is selected, the program will short-list all the airport pavement having longitudinal/transverse cracking. Figure 4-2 A and B shows the lists of the fields and the distress types.

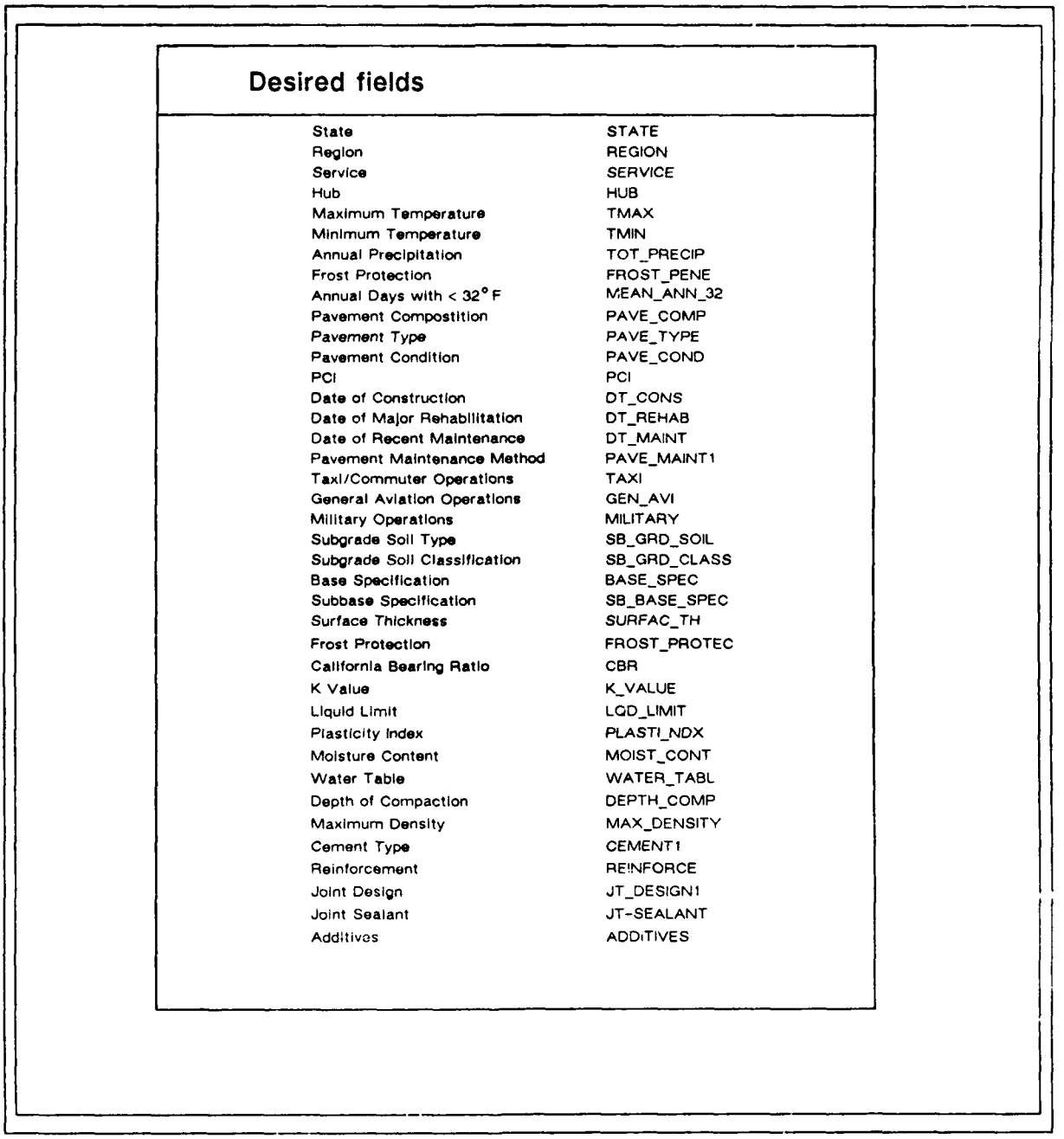
Figure 4-1

PAVEMENT PERFORMANCE MONITORING SYSTEM REPORT GENERATION



* This is not a complete list
** Repetitive process

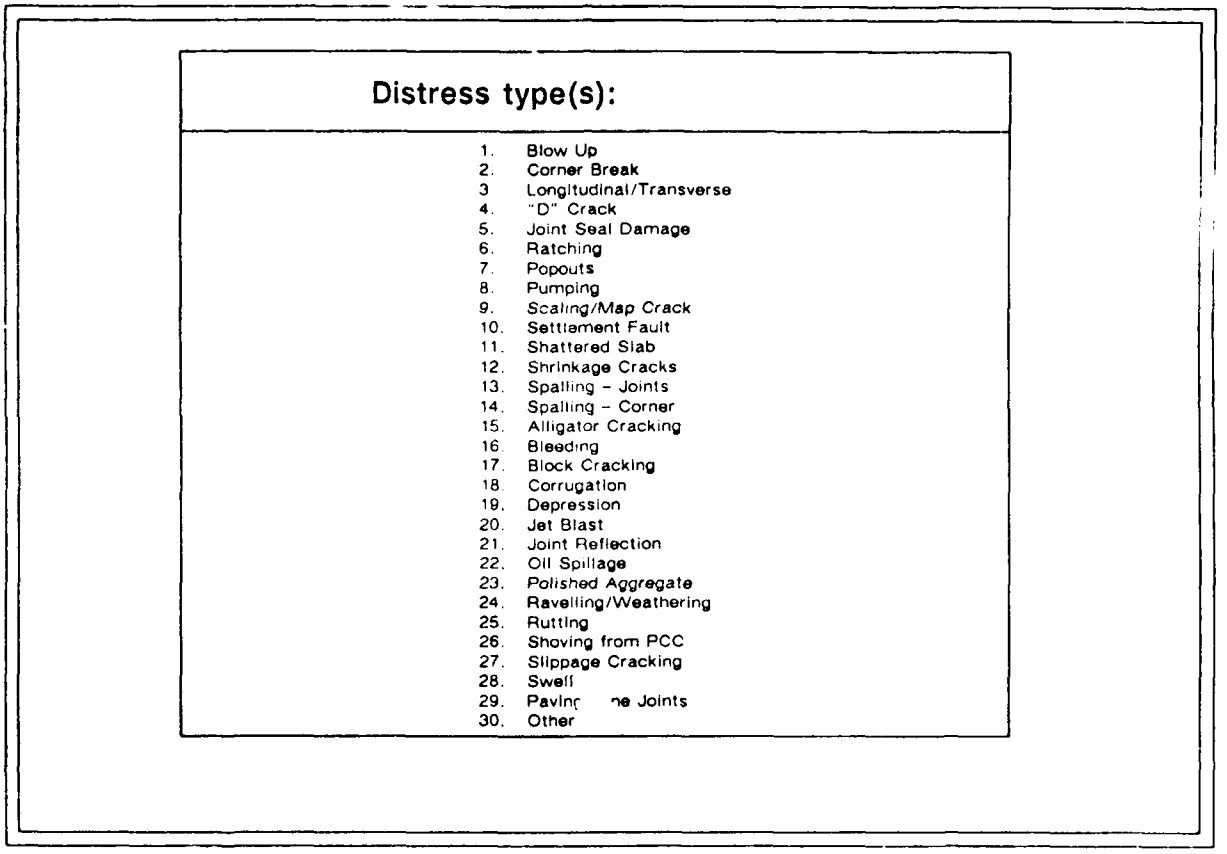
Figure 4-2 A



Desired fields

State	STATE
Region	REGION
Service	SERVICE
Hub	HUB
Maximum Temperature	TMAX
Minimum Temperature	TMIN
Annual Precipitation	TOT_PRECIP
Frost Protection	FROST_PENE
Annual Days with < 32° F	MEAN_ANN_32
Pavement Compostition	PAVE_COMP
Pavement Type	PAVE_TYPE
Pavement Condition	PAVE_COND
PCI	PCI
Date of Construction	DT_CONS
Date of Major Rehabilitation	DT_REHAB
Date of Recent Maintenance	DT_MAINT
Pavement Maintenance Method	PAVE_MAINT1
Taxi/Commuter Operations	TAXI
General Aviation Operations	GEN_AVI
Military Operations	MILITARY
Subgrade Soil Type	SB_GRD_SOIL
Subgrade Soil Classification	SB_GRD_CLASS
Base Specification	BASE_SPEC
Subbase Specification	SB_BASE_SPEC
Surface Thickness	SURFAC_TH
Frost Protection	FROST_PROTEC
California Bearing Ratio	CBR
K Value	K_VALUE
Liquid Limit	LQD_LIMIT
Plasticity Index	PLASTI_NDX
Moisture Content	MOIST_CONT
Water Table	WATER_TABL
Depth of Compaction	DEPTH_COMP
Maximum Density	MAX_DENSITY
Cement Type	CEMENT1
Reinforcement	REINFORCE
Joint Design	JT_DESIGN1
Joint Sealant	JT-SEALANT
Additives	ADDITIVES

Figure 4-2 B


Distress type(s):
1. Blow Up
2. Corner Break
3 Longitudinal/Transverse
4. "D" Crack
5. Joint Seal Damage
6. Ratching
7. Popouts
8. Pumping
9. Scaling/Map Crack
10. Settlement Fault
11. Shattered Slab
12. Shrinkage Cracks
13. Spalling - Joints
14. Spalling - Corner
15. Alligator Cracking
16. Bleeding
17. Block Cracking
18. Corrugation
19. Depression
20. Jet Blast
21. Joint Reflection
22. Oil Spillage
23. Polished Aggregate
24. Ravelling/Weathering
25. Rutting
26. Shoving from PCC
27. Slippage Cracking
28. Swell
29. Paving ne Joints
30. Other

The analyst can specify another criterion and combine it with the first criterion by selecting an AND or an OR. For example, if he/she selects the Distress Type as the field and the corresponding value as Patching, the selection would either be,

(DISTRESS TYPE = "LONGITUDINAL/TRANSVERSE")
OR
(DISTRESS TYPE = "PATCHING")

or

(DISTRESS TYPE = "LONGITUDINAL/TRANSVERSE")
AND
(DISTRESS TYPE = "PATCHING")

Under the current configuration, the selection criteria can consist of a maximum of ten conditions. This record screening process is very useful for isolating desired information in the database. For example, the program will short-list all the records which have either the longitudinal/transverse cracking or are in the Eastern region for the first selection criteria.

4.1.2 Ad-hoc Reports

There is a provision to prepare five predefined and one user-defined report in the current configuration. These reports are printed for all the records in the database which satisfy the selection criteria. This PPMS capability allows users to prepare detailed reports consisting of design, maintenance, climatic, and performance characteristics. The following subsections discuss the contents of these reports and the possible applications.

- **Comprehensive Report**

This type of report contains information on pavement composition, pavement type, maximum temperature, minimum temperature, total precipitation, date of construction, design method, design aircraft, equivalent departures, subgrade soil, subgrade class, base specification and subbase specification. The report gives a quick review of pavement characteristics.

- **Design Report**

This report gives information on the design and materials specifications. In particular, the report includes design method, design aircraft, base, subbase, and surface specifications and thickness, CBR, k value, liquid limit, plasticity index, moisture content, reinforcement, joint design, joint sealant, and additives.

- **Maintenance Report**

This report provides information on pavement maintenance-related characteristics. The specific items include pavement condition, PCI, date of construction, date of recent maintenance, date of major rehabilitation, pavement maintenance method, drainage condition, frost protection method, and water table.

- **Climatic Conditions Report**

This report contains information on environmental conditions such as maximum and minimum temperature, total precipitation, frost penetration, and the number of days with a mean temperature of less than 32° F.

- **Aircraft Operations Report**

The information in this report provides an overview of the load characteristics for a given airport pavement. The specific information includes design aircraft, equivalent departures, air carrier operation, air taxi/commuter operation, general aviation operations, and military operations.

- **Report Based On User-selected Fields**

The analyst may specify any combination of the fields in the database, including distress types as discussed in Section 4.1.1. This report is powerful and flexible as it allows the analyst to review very specific information about interacting variables. Appendix B provides examples of these reports based on the data collected during this study.

4.1.3 Auxiliary Reports

There are some data items, such as "comments", which are not possible to review because of their size and other system constraints. To review such information the user may use the auxiliary reports option. The purpose and contents of auxiliary reports are discussed in the following subsections.

- **Report on Other Fields**

There are some fields such as "design method" and "design aircraft" which have options including "OTHER". The user may enter a descriptive text explaining the reasons for design method or design aircraft information. This report is useful for identifying design methods which are not commonly used.

- **Comments Fields**

Comments are entered for design, maintenance, operations, climate, and performance-related fields. Comments, which are usually text information, are printed separately in a different format. These comments provide additional insights for evaluating pavement performance.

- **Fields with Multiple Entries**

There are some fields in the database which have multiple options such as types of cement and types of joint design. These fields can be printed through this report option.

- **List of All Database Records**

This report lists the airport and pavement identifications for all the records in the database. This report provides a quick review of the inventory of pavements at different airport sites which are being monitored.

- **All Fields for All Records**

This report prints the entire database and provides information on all the existing records. This report is useful for checking the validity and integrity of the database. Since the database size is extremely large, the report is divided into six sub-reports.

- **Distress Type Fields**

This report gives all the information about the severity and density levels of all thirty distresses for the selected records. This is a subset of the previous report.

4.2 Analysis for Frequently Occurring Distress Types

The PPMS system has the capability to generate a report for quick glance of most frequently occurring distress types on all the pavements which are included in the database. The step-by-step procedures for generating this report are explained in the Users Manual. The data output for frequency plot is given in Figure 4- 3 for 92 pavement sections/features currently residing in the database. From Figure 4-3, one can observe that distress number 03 (longitudinal/transverse/diagonal cracks) is the most frequently occurring distress type. In order to analyze this pavement performance indicator, the user of the PPMS has the option to generate a report listing all pavements with this distress type. The report format is shown in Figure 4-4. The last column in Figure 4-4 gives a code for severity level prevalent for this distress type. The definition of numeric codes used for different severity levels is provided in the User's Manual. For example, Code 7 represents that low, medium, and high severity levels of distress are observed on the same pavement feature ID No. 1604 at GRB.

Further screening and sub-reports can be easily manipulated and outputs are analyzed for identifying commonalities and/or causal factors leading to this distress type. Figures 4-5 through 4-15 illustrate subsets of same data pertaining to pavements with longitudinal/transverse/diagonal cracking. The outputs shown are for the following selection criteria:

- Original Pavements
- Overlayed Pavements
- PCC Pavements
- ACC Pavements
- Southern Region
- Eastern Region
- Great Lakes Region
- Tmax >100 ° F
- Tmax <100 ° F
- Tmin <-25 ° F
- Tmin >-25 ° F

Since the data set is small, it will not be appropriate to make judgement calls on possible causal factors for these pavements. The report with potential causal factors as discussed earlier in Section 2.1 is illustrated in Figure 4-16.

Figure 4-3 Distress Types - Frequency Plot Output

DISTRESS NUMBER	DESCRIPTION	FREQUENCY
01	Blow Up	1
02	Corner break	14
03	Longitudinal/Transverse/Diagonal Cracks	49
04	"D" Crack	11
05	Joint Seal Damage	26
06	Patching	26
07	Popouts	13
08	Pumping	2
09	Scaling/Map Cracking/Crazing	10
10	Settlement/Fault	13
11	Shattered Slab	7
12	Shrinkage Cracks	14
13	Spalling-Joints	20
14	Spalling-Corner	15
15	Alligator Cracking	17
16	Bleeding	2
17	Block Cracking	10
18	Corrugation	0
19	Depression	11
20	Jet Blast	0
21	Joint Reflection	2
22	Oil Spillage	4
23	Polished Aaggregate	3
24	Ravelling/Weathering	24
25	Rutting	8
26	Shoving from PCC	0
27	Slippage Cracking	1
28	Swell	3
29	Paving Lane Joints	1
30	Other	4

Figure 4-4: Pavements with Longitudinal & Transverse Cracking

REPORT ON USER SELECTED FIELDS

AIR_ID	PAVE_ID	REGION	TMAX	TMIN	PAVE_COMP	PAVE_TYPE	PCI	DT_CONS	DT_REHAB	PAVE_MAINT1	DSM_MTH	S_03
BWI	10-28/5+00_100+00	EASTERN	105	-7	ACC	OVERLAYED	55.00	48/01/08	73/01/13	CRACK FILLING	AC 150/5320 -6C	1
GSP	3-21/5+00_71+00	SOUTHERN	103	-6	ACC	ORIGINAL	.00	01/01/62	01/01/77	JOINT SEAL	AC 150/5320 -6B	1
GSP	3-21/71+00_76+00	SOUTHERN	103	-6	PCC	ORIGINAL	.00	62/01/01		JOINT SEAL		1
IAD	12-30/29+50_70+00	EASTERN	104	-18	PCC	ORIGINAL	36.00	01/01/62	01/01/00	JOINT SEAL	OTHER	1
IAD	19L/111+00_145+00	EASTERN	104	-18			.00					1
IAD	1L-19R/30+00_56+00	EASTERN	104	-18			.00					1
IAD	1R/19L/30+00_64+00	EASTERN	104	-18	PCC	ORIGINAL	.00	62/01/01				1
MSN	1702	GREAT LAKES	104	-37	ACC	ORIGINAL	87.00	79/01/01				4
MSN	1705	GREAT LAKES	104	-37	ACC	OVERLAYED	48.00	52/01/01	78/01/01			4
MSN	2302	GREAT LAKES	104	-37	ACC	OVERLAYED	78.00	42/01/01	80/01/01			4
MSN	2502	GREAT LAKES	104	-37	ACC	OVERLAYED	30.00	42/01/01	72/01/01			4
MSN	2601	GREAT LAKES	104	-37	ACC	OVERLAYED	46.00	58/01/01	73/01/01			4
MSN	301	GREAT LAKES	104	-37	ACC	OVERLAYED	79.00	64/01/01	79/01/01			4
MSN	402	GREAT LAKES	104	-37	ACC	OVERLAYED	65.00	53/01/01	80/01/01			4
MSN	701	GREAT LAKES	104	-37	ACC	OVERLAYED	29.00	56/01/01	73/01/01			4
PHX	8/8-1_8-2	WESTERN PACIFIC	118	17	ACC	ORIGINAL	43.00	80/01/01	00/01/01		AIM	1
FLL	9L/27R_R1	SOUTHERN	98	31	PCC	OVERLAYED	71.00	63/01/01	74/01/01			4
FLL	TW/A	SOUTHERN	98	31	PCC	OVERLAYED	80.00	63/01/01	74/01/01			4
MKE	109	GREAT LAKES	101	-26	PCC	OVERLAYED	72.00	74/01/01				1
MKE	2307	GREAT LAKES	101	-26	PCC	OVERLAYED	72.00	70/01/01				4
MKE	2308	GREAT LAKES	101	-26	PCC	OVERLAYED	67.00	70/01/01				4
MKE	2501	GREAT LAKES	101	-26	PCC	OVERLAYED	80.00	64/01/01	74/01/01			4
MKE	2502	GREAT LAKES	101	-26	PCC	OVERLAYED	89.00	64/01/01	74/01/01			4
MKE	2507	GREAT LAKES	101	-26	PCC	OVERLAYED	47.00	70/01/01				6
MKE	2508	GREAT LAKES	101	-26	PCC	OVERLAYED	64.00	70/01/01				1
JFK	TW-J	EASTERN	104	-2	ACC	ORIGINAL	92.00	79/01/01	00/01/01			1
JFK	TW-K	EASTERN	104	-2	ACC	ORIGINAL	50.00	71/01/01	00/01/01			4
JFK	TW-O	EASTERN	104	-2	ACC	ORIGINAL	76.00	65/01/01	00/01/01			4
LSE	101	GREAT LAKES	104	-37	ACC	OVERLAYED	79.00	44/01/01	78/01/01			4
LSE	201	GREAT LAKES	104	-37	ACC	OVERLAYED	75.00	44/01/01	80/01/01			4
LSE	2403	GREAT LAKES	104	-37	ACC	OVERLAYED	83.00	44/01/01	80/01/01			4
LSE	2404	GREAT LAKES	104	-37	ACC	OVERLAYED	84.00	44/01/01	80/01/01			4
LSE	2503	GREAT LAKES	104	-37	ACC	OVERLAYED	83.00	44/01/01	78/01/01			4
LSE	2504	GREAT LAKES	104	-37	ACC	OVERLAYED	80.00	44/01/01	78/01/01			4
LSE	2603	GREAT LAKES	104	-37	ACC	OVERLAYED	87.00	68/01/01	78/01/01			4
LSE	2604	GREAT LAKES	104	-37	ACC	OVERLAYED	84.00	68/01/01	78/01/01			4
LSE	301	GREAT LAKES	104	-37	ACC	OVERLAYED	80.00	44/01/01	80/01/01			4
LSE	304	GREAT LAKES	104	-37	ACC	OVERLAYED	85.00	44/01/01	78/01/01			4
GRB	1504	GREAT LAKES	99	-31	ACC	ORIGINAL	19.00	48/01/01	00/01/01			4
GRB	1602	GREAT LAKES	99	-31	PCC	ORIGINAL	27.00	84/01/01				4
GRB	1604	GREAT LAKES	99	-31	PCC	ORIGINAL	25.00	77/01/01				7
GRB	1801	GREAT LAKES	99	-31	PCC	ORIGINAL	84.00	80/01/01				4
GRB	1802	GREAT LAKES	99	-31	PCC	ORIGINAL	90.00	82/01/01				1
GRB	201	GREAT LAKES	99	-31	PCC	OVERLAYED	83.00	48/01/01	82/01/01			1
GRB	2601	GREAT LAKES	99	-31	PCC	OVERLAYED	69.00	48/01/01	72/01/01			4
GRB	301	GREAT LAKES	99	-31	PCC	ORIGINAL	95.00	82/01/01				4
GRB	403	GREAT LAKES	99	-31	PCC	OVERLAYED	59.00	66/01/01	78/01/01			4
GRB	501	GREAT LAKES	99	-31	PCC	OVERLAYED	39.00	48/01/01	75/01/01			1
ORD	TW/A	GREAT LAKES	102	-26	PCC	ORIGINAL	70.00	67/01/01				4

Figure 4-5: Original Pavements with Longitudinal & Transverse Cracking

REPORT ON USER SELECTED FIELDS

AIR_ID	PAVE_ID	REGION	TMAX	TMIN	PAVE_COMP	PAVE_TYPE	PCI	DT_CONS	DT_REHAB	PAVE_MAINT1	DSM_MTH	S_03
GSP	3-21/5+00_71+00	SOUTHERN	103	-6	ACC	ORIGINAL	.00	01/01/62	01/01/77	JOINT SEAL	AC 150/5320 -6B	1
GSP	3-21/71+00_76+00	SOUTHERN	103	-6	PCC	ORIGINAL	.00	62/01/01		JOINT SEAL		1
IAD	12-30/29+50_70+00	EASTERN	104	-18	PCC	ORIGINAL	36.00	01/01/62	01/01/00	JOINT SEAL	OTHER	1
IAD	1R/19L/30+00_64+00	EASTERN	104	-18	PCC	ORIGINAL	.00	62/01/01				1
MSN	1702	GREAT LAKES	104	-37	ACC	ORIGINAL	87.00	79/01/01				4
PHX	B/B-1_B-2	WESTERN PACIFIC	118	17	ACC	ORIGINAL	43.00	80/01/01	00/01/01		AIM	1
JFK	TW-J	EASTERN	104	-2	ACC	ORIGINAL	92.00	79/01/01	00/01/01			1
JFK	TW-K	EASTERN	104	-2	ACC	ORIGINAL	50.00	71/01/01	00/01/01			4
JFK	TW-O	EASTERN	104	-2	ACC	ORIGINAL	76.00	65/01/01	00/01/01			4
GRB	1504	GREAT LAKES	99	-31	ACC	ORIGINAL	19.00	48/01/01	00/01/01			4
GRB	1602	GREAT LAKES	99	-31	PCC	ORIGINAL	27.00	84/01/01				4
GRB	1604	GREAT LAKES	99	-31	PCC	ORIGINAL	25.00	77/01/01				7
GRB	1801	GREAT LAKES	99	-31	PCC	ORIGINAL	84.00	80/01/01				4
GRB	1802	GREAT LAKES	99	-31	PCC	ORIGINAL	90.00	82/01/01				1
GRB	301	GREAT LAKES	99	-31	PCC	ORIGINAL	95.00	82/01/01				4
ORD	TW/A	GREAT LAKES	102	-26	PCC	ORIGINAL	70.00	67/01/01				4

Figure 4-6: Overlayed Pavements with Longitudinal & Transverse Cracking

REPORT ON USER SELECTED FIELDS

AIR_ID	PAVE_ID	REGION	TMAX	TMIN	PAVE_COMP	PAVE_TYPE	PCI	DT_CONS	DT_REHAB	PAVE_MAINT1	DSN_MTH	S_03
BWI	10-28/5+00_100+00	EASTERN	105	-7	ACC	OVERLAYED	55.00	48/01/08	73/01/13	CRACK FILLING	AC 150/5320 -6C	1
MSN	1705	GREAT LAKES	104	-37	ACC	OVERLAYED	48.00	52/01/01	78/01/01			4
MSN	2302	GREAT LAKES	104	-37	ACC	OVERLAYED	78.00	42/01/01	80/01/01			4
MSN	2502	GREAT LAKES	104	-37	ACC	OVERLAYED	30.00	42/01/01	72/01/01			4
MSN	2601	GREAT LAKES	104	-37	ACC	OVERLAYED	46.00	58/01/01	73/01/01			4
MSN	301	GREAT LAKES	104	-37	ACC	OVERLAYED	79.00	64/01/01	79/01/01			4
MSN	402	GREAT LAKES	104	-37	ACC	OVERLAYED	65.00	53/01/01	80/01/01			4
MSN	701	GREAT LAKES	104	-37	ACC	OVERLAYED	29.00	56/01/01	73/01/01			4
FLL	9L/27R_R1	SOUTHERN	98	31	PCC	OVERLAYED	71.00	63/01/01	74/01/01			4
FLL	TW/A	SOUTHERN	98	31	PCC	OVERLAYED	80.00	63/01/01	74/01/01			4
MKE	109	GREAT LAKES	101	-26	PCC	OVERLAYED	72.00	74/01/01				1
MKE	2307	GREAT LAKES	101	-26	PCC	OVERLAYED	72.00	70/01/01				4
MKE	2308	GREAT LAKES	101	-26	PCC	OVERLAYED	67.00	70/01/01				4
MKE	2501	GREAT LAKES	101	-26	PCC	OVERLAYED	80.00	64/01/01	74/01/01			4
MKE	2502	GREAT LAKES	101	-26	PCC	OVERLAYED	89.00	64/01/01	74/01/01			4
MKE	2507	GREAT LAKES	101	-26	PCC	OVERLAYED	47.00	70/01/01				6
MKE	2508	GREAT LAKES	101	-26	PCC	OVERLAYED	64.00	70/01/01				1
LSE	101	GREAT LAKES	104	-37	ACC	OVERLAYED	79.00	44/01/01	78/01/01			4
LSE	201	GREAT LAKES	104	-37	ACC	OVERLAYED	75.00	44/01/01	80/01/01			4
LSE	2403	GREAT LAKES	104	-37	ACC	OVERLAYED	83.00	44/01/01	80/01/01			4
LSE	2404	GREAT LAKES	104	-37	ACC	OVERLAYED	84.00	44/01/01	80/01/01			4
LSE	2503	GREAT LAKES	104	-37	ACC	OVERLAYED	83.00	44/01/01	78/01/01			4
LSE	2504	GREAT LAKES	104	-37	ACC	OVERLAYED	80.00	44/01/01	78/01/01			4
LSE	2603	GREAT LAKES	104	-37	ACC	OVERLAYED	87.00	68/01/01	78/01/01			4
LSE	2604	GREAT LAKES	104	-37	ACC	OVERLAYED	84.00	68/01/01	78/01/01			4
LSE	301	GREAT LAKES	104	-37	ACC	OVERLAYED	80.00	44/01/01	80/01/01			4
LSE	304	GREAT LAKES	104	-37	ACC	OVERLAYED	85.00	44/01/01	78/01/01			4
GRB	201	GREAT LAKES	99	-31	PCC	OVERLAYED	83.00	48/01/01	82/01/01			1
GRB	2601	GREAT LAKES	99	-31	PCC	OVERLAYED	69.00	48/01/01	72/01/01			4
GRB	403	GREAT LAKES	99	-31	PCC	OVERLAYED	59.00	66/01/01	78/01/01			4
GRB	501	GREAT LAKES	99	-31	PCC	OVERLAYED	39.00	48/01/01	75/01/01			1

Figure 4-7: PCC Pavements with Longitudinal & Transverse Cracking

REPORT ON USER SELECTED FIELDS

AIR_ID	PAVE_ID	REGION	TMAX	TMIN	PAVE_COMP	PAVE_TYPE	PCI	DT_CONS	DT_REHAB	PAVE_MAINT1	DSN_RTH	S_03
GSP	3-21/71+00_76+00	SOUTHERN	103	-6	PCC	ORIGINAL	.00	62/01/01		JOINT SEAL		1
IAD	12-30/29+50_70+00	EASTERN	104	-18	PCC	ORIGINAL	36.00	01/01/62	01/01/00	JOINT SEAL	OTHER	1
IAD	1R/19L/30+00_64+00	EASTERN	104	-18	PCC	ORIGINAL	.00	62/01/01				4
FLL	9L/27R_R1	SOUTHERN	98	31	PCC	OVERLAYED	71.00	63/01/01	74/01/01			4
FLL	TW/A	SOUTHERN	98	31	PCC	OVERLAYED	80.00	63/01/01	74/01/01			1
MKE	109	GREAT LAKES	101	-26	PCC	OVERLAYED	72.00	74/01/01				4
MKE	2307	GREAT LAKES	101	-26	PCC	OVERLAYED	72.00	70/01/01				4
MKE	2308	GREAT LAKES	101	-26	PCC	OVERLAYED	67.00	70/01/01				4
MKE	2501	GREAT LAKES	101	-26	PCC	OVERLAYED	80.00	64/01/01	74/01/01			4
MKE	2502	GREAT LAKES	101	-26	PCC	OVERLAYED	89.00	64/01/01	74/01/01			6
MKE	2507	GREAT LAKES	101	-26	PCC	OVERLAYED	47.00	70/01/01				1
MKE	2508	GREAT LAKES	101	-26	PCC	OVERLAYED	64.00	70/01/01				4
GRB	1602	GREAT LAKES	99	-31	PCC	ORIGINAL	27.00	84/01/01				7
GRB	1604	GREAT LAKES	99	-31	PCC	ORIGINAL	25.00	77/01/01				4
GRB	1801	GREAT LAKES	99	-31	PCC	ORIGINAL	84.00	80/01/01				1
GRB	1802	GREAT LAKES	99	-31	PCC	ORIGINAL	90.00	82/01/01				1
GRB	201	GREAT LAKES	99	-31	PCC	OVERLAYED	83.00	48/01/01	82/01/01			4
GRB	2601	GREAT LAKES	99	-31	PCC	OVERLAYED	69.00	48/01/01	72/01/01			4
GRB	301	GREAT LAKES	99	-31	PCC	ORIGINAL	95.00	82/01/01				4
GRB	403	GREAT LAKES	99	-31	PCC	OVERLAYED	59.00	66/01/01	78/01/01			1
GRB	501	GREAT LAKES	99	-31	PCC	OVERLAYED	39.00	48/01/01	75/01/01			4
ORD	TW/A	GREAT LAKES	102	-26	PCC	ORIGINAL	70.00	67/01/01				

Figure 4-8: ACC Pavements with Longitudinal & Transverse Cracking

REPORT ON USER SELECTED FIELDS

AIR_ID	PAVE_ID	REGION	TMAX	TMIN	PAVE_COMP	PAVE_TYPE	PCI	DT_CONS	DT_REHAB	PAVE_MAINT1	DSN_MTH	S_03
BWI	10-28/5+00_100+00	EASTERN	105	-7	ACC	OVERLAYED	55.00	48/01/08	73/01/13	CRACK FILLING	AC 150/5320 -6C	1
GSP	3-21/5+00_71+00	SOUTHERN	103	-6	ACC	ORIGINAL	.00	01/01/62	01/01/77	JOINT SEAL	AC 150/5320 -6B	1
MSN	1702	GREAT LAKES	104	-37	ACC	ORIGINAL	87.00	79/01/01				4
MSN	1705	GREAT LAKES	104	-37	ACC	OVERLAYED	48.00	52/01/01	78/01/01			4
MSN	2302	GREAT LAKES	104	-37	ACC	OVERLAYED	78.00	42/01/01	80/01/01			4
MSN	2502	GREAT LAKES	104	-37	ACC	OVERLAYED	30.00	42/01/01	72/01/01			4
MSN	2601	GREAT LAKES	104	-37	ACC	OVERLAYED	46.00	58/01/01	73/01/01			4
MSN	301	GREAT LAKES	104	-37	ACC	OVERLAYED	79.00	64/01/01	79/01/01			4
MSN	402	GREAT LAKES	104	-37	ACC	OVERLAYED	65.00	53/01/01	80/01/01			4
MSN	701	GREAT LAKES	104	-37	ACC	OVERLAYED	29.00	56/01/01	73/01/01			4
PHX	8/8-1_8-2	WESTERN PACIFIC	118	17	ACC	ORIGINAL	43.00	80/01/01	00/01/01		AIM	1
JFK	TW-J	EASTERN	104	-2	ACC	ORIGINAL	92.00	79/01/01	00/01/01			1
JFK	TW-K	EASTERN	104	-2	ACC	ORIGINAL	50.00	71/01/01	00/01/01			4
JFK	TW-O	EASTERN	104	-2	ACC	ORIGINAL	76.00	65/01/01	00/01/01			4
LSE	101	GREAT LAKES	104	-37	ACC	OVERLAYED	79.00	44/01/01	78/01/01			4
LSE	201	GREAT LAKES	104	-37	ACC	OVERLAYED	75.00	44/01/01	80/01/01			4
LSE	2403	GREAT LAKES	104	-37	ACC	OVERLAYED	83.00	44/01/01	80/01/01			4
LSE	2404	GREAT LAKES	104	-37	ACC	OVERLAYED	84.00	44/01/01	80/01/01			4
LSE	2503	GREAT LAKES	104	-37	ACC	OVERLAYED	83.00	44/01/01	78/01/01			4
LSE	2504	GREAT LAKES	104	-37	ACC	OVERLAYED	80.00	44/01/01	78/01/01			4
LSE	2603	GREAT LAKES	104	-37	ACC	OVERLAYED	87.00	68/01/01	78/01/01			4
LSE	2604	GREAT LAKES	104	-37	ACC	OVERLAYED	84.00	68/01/01	78/01/01			4
LSE	301	GREAT LAKES	104	-37	ACC	OVERLAYED	80.00	44/01/01	80/01/01			4
LSE	304	GREAT LAKES	104	-37	ACC	OVERLAYED	85.00	44/01/01	78/01/01			4
GRB	1504	GREAT LAKES	99	-31	ACC	ORIGINAL	19.00	48/01/01	00/01/01			4

Figure 4-9: Southern Region with Longitudinal & Transverse Cracking

REPORT ON USER SELECTED FIELDS

AIR_ID	PAVE_ID	REGION	TMAX	TMIN	PAVE_COMP	PAVE_TYPE	PCI	DT_CONS	DT_REHAB	PAVE_MAINT1	DSN_MIN	S_03
GSP	3-21/5+00_71+00	SOUTHERN	103	-6	ACC	ORIGINAL	.00	01/01/62	01/01/77	JOINT SEAL	AC 150/5320 68	1
GSP	3-21/71+00_76+00	SOUTHERN	103	-6	PCC	ORIGINAL	.00	62/01/01		JOINT SEAL		1
FLL	9L/27R_R1	SOUTHERN	98	31	PCC	OVERLAYED	71.00	63/01/01	74/01/01			4
FLL	TW/A	SOUTHERN	98	31	PCC	OVERLAYED	80.00	63/01/01	74/01/01			4

Figure 4-10: Eastern Region with Longitudinal & Transverse Cracking

REPORT ON USER SELECTED FIELDS

AIR_ID	PAVE_ID	REGION	TMAX	TMIN	PAVE_COMP	PAVE_TYPE	PCI	DT_CONS	DT_REHAB	PAVE_MAINT1	DSN_MTN		S_03
BWI	10-28/5+00_100+00	EASTERN	105	-7	ACC	OVERLAYED	15.00	48/01/08	73/01/13	CRACK FILLING	AC 150/5320	-6C	1
IAD	12-30/29+50_70+00	EASTERN	104	-18	PCC	ORIGINAL	86.00	01/01/62	01/01/00	JOINT SEAL	OTHER		1
IAD	19L/111+00_145+00	EASTERN	104	-18			.00						1
IAD	1L-19R/30+00_56+00	EASTERN	104	-18			.00						1
IAD	1R/19L/30+00_64+00	EASTERN	104	-18	PCC	ORIGINAL	.00	62/01/01					1
JFK	TW-J	EASTERN	104	-2	ACC	ORIGINAL	92.00	79/01/01	00/01/01				1
JFK	TW-K	EASTERN	104	-2	ACC	ORIGINAL	50.00	71/01/01	00/01/01				1
JFK	TW-O	EASTERN	104	-2	ACC	ORIGINAL	76.00	65/01/01	00/01/01				4
													4

Figure 4-11: Great Lakes Region with Longitudinal & Transverse Cracking

REPORT ON USER SELECTED FIELDS

AIR_ID	PAVE_ID	REGION	TMAX	TMIN	PAVE_COMP	PAVE_TYPE	PCI	DT_CONS	DT_REHAB	PAVE_MAINT1	OSW_MTH	S_03
MSN	1702	GREAT LAKES	104	-37	ACC	ORIGINAL	87.00	79/01/01				4
MSN	1705	GREAT LAKES	104	-37	ACC	OVERLAYED	48.00	52/01/01	78/01/01			4
MSN	2302	GREAT LAKES	104	-37	ACC	OVERLAYED	78.00	42/01/01	80/01/01			4
MSN	2502	GREAT LAKES	104	-37	ACC	OVERLAYED	30.00	42/01/01	72/01/01			4
MSN	2601	GREAT LAKES	104	-37	ACC	OVERLAYED	46.00	58/01/01	73/01/01			4
MSN	301	GREAT LAKES	104	-37	ACC	OVERLAYED	79.00	64/01/01	79/01/01			4
MSN	402	GREAT LAKES	104	-37	ACC	OVERLAYED	65.00	53/01/01	80/01/01			4
MSN	701	GREAT LAKES	104	-37	ACC	OVERLAYED	29.00	56/01/01	73/01/01			4
MKE	109	GREAT LAKES	101	-26	PCC	OVERLAYED	72.00	74/01/01				1
MKE	2307	GREAT LAKES	101	-26	PCC	OVERLAYED	72.00	70/01/01				4
MKE	2308	GREAT LAKES	101	-26	PCC	OVERLAYED	67.00	70/01/01				4
MKE	2501	GREAT LAKES	101	-26	PCC	OVERLAYED	80.00	64/01/01	74/01/01			4
MKE	2502	GREAT LAKES	101	-26	PCC	OVERLAYED	89.00	64/01/01	74/01/01			4
MKE	2507	GREAT LAKES	101	-26	PCC	OVERLAYED	47.00	70/01/01				6
MKE	2508	GREAT LAKES	101	-26	PCC	OVERLAYED	64.00	70/01/01				1
LSE	101	GREAT LAKES	104	-37	ACC	OVERLAYED	79.00	44/01/01	78/01/01			4
LSE	201	GREAT LAKES	104	-37	ACC	OVERLAYED	75.00	44/01/01	80/01/01			4
LSE	2403	GREAT LAKES	104	-37	ACC	OVERLAYED	83.00	44/01/01	80/01/01			4
LSE	2404	GREAT LAKES	104	-37	ACC	OVERLAYED	84.00	44/01/01	80/01/01			4
LSE	2503	GREAT LAKES	104	-37	ACC	OVERLAYED	83.00	44/01/01	78/01/01			4
LSE	2504	GREAT LAKES	104	-37	ACC	OVERLAYED	80.00	44/01/01	78/01/01			4
LSE	2603	GREAT LAKES	104	-37	ACC	OVERLAYED	87.00	68/01/01	78/01/01			4
LSE	2604	GREAT LAKES	104	-37	ACC	OVERLAYED	84.00	68/01/01	78/01/01			4
LSE	301	GREAT LAKES	104	-37	ACC	OVERLAYED	80.00	44/01/01	80/01/01			4
LSE	304	GREAT LAKES	104	-37	ACC	OVERLAYED	85.00	44/01/01	78/01/01			4
GRB	1504	GREAT LAKES	99	-31	ACC	ORIGINAL	19.00	48/01/01	00/01/01			4
GRB	1602	GREAT LAKES	99	-31	PCC	ORIGINAL	27.00	84/01/01				4
GRB	1604	GREAT LAKES	99	-31	PCC	ORIGINAL	25.00	77/01/01				7
GRB	1801	GREAT LAKES	99	-31	PCC	ORIGINAL	84.00	80/01/01				4
GRB	1802	GREAT LAKES	99	-31	PCC	ORIGINAL	90.00	82/01/01				1
GRB	201	GREAT LAKES	99	-31	PCC	OVERLAYED	83.00	48/01/01	82/01/01			1
GRB	2601	GREAT LAKES	99	-31	PCC	OVERLAYED	69.00	48/01/01	72/01/01			4
GRB	301	GREAT LAKES	99	-31	PCC	ORIGINAL	95.00	82/01/01				4
GRB	403	GREAT LAKES	99	-31	PCC	OVERLAYED	59.00	66/01/01	78/01/01			4
GRB	501	GREAT LAKES	99	-31	PCC	OVERLAYED	39.00	48/01/01	75/01/01			1
ORD	TW/A	GREAT LAKES	102	-26	PCC	ORIGINAL	70.00	67/01/01				4

Figure 4-12: Pavements Having Tmax>100°F with Longitudinal & Transverse Cracking

REPORT ON USER SELECTED FIELDS

AIR_ID	PAVE_ID	REGION	TMAX	TMIN	PAVE_COMP	PAVE_TYPE	PCI	DT_CONS	DT_REHAB	PAVE_MAINT1	DSN_MTH	S_03
BWI	10-28/5+00_100+00	EASTERN	105	-7	ACC	OVERLAYED	55.00	48/01/08	73/01/13	CRACK FILLING	AC 150/5320 -6C	1
GSP	3-21/5+00_71+00	SOUTHERN	103	-6	ACC	ORIGINAL	.00	01/01/62	01/01/77	JOINT SEAL	AC 150/5320 -68	1
GSP	3-21/71+00_76+00	SOUTHERN	103	-6	PCC	ORIGINAL	.00	62/01/01		JOINT SEAL		1
IAD	12-30/29+50_70+00	EASTERN	104	-18	PCC	ORIGINAL	36.00	01/01/62	01/01/00	JOINT SEAL	OTHER	1
IAD	19L/111+00_145+00	EASTERN	104	-18			.00					1
IAD	1L-19R/30+00_56+00	EASTERN	104	-18			.00					1
IAD	1R/19L/30+00_64+00	EASTERN	104	-18	PCC	ORIGINAL	.00	62/01/01				1
MSN	1702	GREAT LAKES	104	-37	ACC	ORIGINAL	87.00	79/01/01				4
MSN	1705	GREAT LAKES	104	-37	ACC	OVERLAYED	48.00	52/01/01	78/01/01			4
MSN	2302	GREAT LAKES	104	-37	ACC	OVERLAYED	78.00	42/01/01	80/01/01			4
MSN	2502	GREAT LAKES	104	-37	ACC	OVERLAYED	30.00	42/01/01	72/01/01			4
MSN	2601	GREAT LAKES	104	-37	ACC	OVERLAYED	46.00	58/01/01	73/01/01			4
MSN	301	GREAT LAKES	104	-37	ACC	OVERLAYED	79.00	64/01/01	79/01/01			4
MSN	402	GREAT LAKES	104	-37	ACC	OVERLAYED	65.00	53/01/01	80/01/01			4
MSN	701	GREAT LAKES	104	-37	ACC	OVERLAYED	29.00	56/01/01	73/01/01			4
PHX	B/8-1_8-2	WESTERN PACIFIC	118	17	ACC	ORIGINAL	43.00	80/01/01	00/01/01		AIM	1
MKE	109	GREAT LAKES	101	-26	PCC	OVERLAYED	72.00	74/01/01				1
MKE	2307	GREAT LAKES	101	-26	PCC	OVERLAYED	72.00	70/01/01				4
MKE	2308	GREAT LAKES	101	-26	PCC	OVERLAYED	67.00	70/01/01				4
MKE	2501	GREAT LAKES	101	-26	PCC	OVERLAYED	80.00	64/01/01	74/01/01			4
MKE	2502	GREAT LAKES	101	-26	PCC	OVERLAYED	89.00	64/01/01	74/01/01			4
MKE	2507	GREAT LAKES	101	-26	PCC	OVERLAYED	47.00	70/01/01				6
MKE	2508	GREAT LAKES	101	-26	PCC	OVERLAYED	64.00	70/01/01				1
JFK	TW-J	EASTERN	104	-2	ACC	ORIGINAL	92.00	79/01/01	00/01/01			1
JFK	TW-K	EASTERN	104	-2	ACC	ORIGINAL	50.00	71/01/01	00/01/01			4
JFK	TW-O	EASTERN	104	-2	ACC	ORIGINAL	76.00	65/01/01	00/01/01			4
LSE	101	GREAT LAKES	104	-37	ACC	OVERLAYED	79.00	44/01/01	78/01/01			4
LSE	201	GREAT LAKES	104	-37	ACC	OVERLAYED	75.00	44/01/01	80/01/01			4
LSE	2403	GREAT LAKES	104	-37	ACC	OVERLAYED	83.00	44/01/01	80/01/01			4
LSE	2404	GREAT LAKES	104	-37	ACC	OVERLAYED	84.00	44/01/01	80/01/01			4
LSE	2503	GREAT LAKES	104	-37	ACC	OVERLAYED	83.00	44/01/01	78/01/01			4
LSE	2504	GREAT LAKES	104	-37	ACC	OVERLAYED	80.00	44/01/01	78/01/01			4
LSE	2603	GREAT LAKES	104	-37	ACC	OVERLAYED	87.00	68/01/01	78/01/01			4
LSE	2604	GREAT LAKES	104	-37	ACC	OVERLAYED	84.00	68/01/01	78/01/01			4
LSE	301	GREAT LAKES	104	-37	ACC	OVERLAYED	80.00	44/01/01	80/01/01			4
LSE	304	GREAT LAKES	104	-37	ACC	OVERLAYED	85.00	44/01/01	78/01/01			4
ORD	TW/A	GREAT LAKES	102	-26	PCC	ORIGINAL	70.00	67/01/01				4

Figure 4-13: Pavements Having Tmax<100°F with Longitudinal & Transverse Cracking

REPORT ON USER SELECTED FIELDS

AIR_ID	PAVE_ID	REGION	TMAX	TMIN	PAVE_COMP	PAVE_TYPE	PCI	DT_CONS	DT_REHAB	PAVE_MAINT1	OSN_MTH	S_03
FLL	9L/27R_R1	SOUTHERN	98	31	PCC	OVERLAYED	71.00	63/01/01	74/01/01			4
FLL	TW/A	SOUTHERN	98	31	PCC	OVERLAYED	80.00	63/01/01	74/01/01			4
GRB	1504	GREAT LAKES	99	-31	ACC	ORIGINAL	19.00	48/01/01	00/01/01			4
GRB	1602	GREAT LAKES	99	-31	PCC	ORIGINAL	27.00	84/01/01				4
GRB	1604	GREAT LAKES	99	-31	PCC	ORIGINAL	25.00	77/01/01				7
GRB	1801	GREAT LAKES	99	-31	PCC	ORIGINAL	84.00	80/01/01				4
GRB	1802	GREAT LAKES	99	-31	PCC	ORIGINAL	90.00	82/01/01				1
GRB	201	GREAT LAKES	99	-31	PCC	OVERLAYED	83.00	48/01/01	82/01/01			1
GRB	2601	GREAT LAKES	99	-31	PCC	OVERLAYED	69.00	48/01/01	72/01/01			4
GRB	301	GREAT LAKES	99	-31	PCC	ORIGINAL	95.00	82/01/01				4
GRB	403	GREAT LAKES	99	-31	PCC	OVERLAYED	59.00	66/01/01	78/01/01			4
GRB	501	GREAT LAKES	99	-31	PCC	OVERLAYED	39.00	48/01/01	75/01/01			1

Figure 4-14: Pavements Having Tmin<-25°F with Longitudinal & Transverse Cracking

REPORT ON USER SELECTED FIELDS

AIR_ID	PAVE_ID	REGION	TMAX	TMIN	PAVE_COMP	PAVE_TYPE	PCI	DT_CONS	DT_REHAB	PAVE_MAINTI	DSN_MTH	S_03
MSN	1702	GREAT LAKES	104	-37	ACC	ORIGINAL	87.00	79/01/01				4
MSN	1705	GREAT LAKES	104	-37	ACC	OVERLAYED	48.00	52/01/01	78/01/01			4
MSN	2302	GREAT LAKES	104	-37	ACC	OVERLAYED	78.00	42/01/01	80/01/01			4
MSN	2502	GREAT LAKES	104	-37	ACC	OVERLAYED	30.00	42/01/01	72/01/01			4
MSN	2601	GREAT LAKES	104	-37	ACC	OVERLAYED	46.00	58/01/01	73/01/01			4
MSN	301	GREAT LAKES	104	-37	ACC	OVERLAYED	79.00	64/01/01	79/01/01			4
MSN	402	GREAT LAKES	104	-37	ACC	OVERLAYED	65.00	53/01/01	80/01/01			4
MSN	701	GREAT LAKES	104	-37	ACC	OVERLAYED	29.00	56/01/01	73/01/01			4
MKE	109	GREAT LAKES	101	-26	PCC	OVERLAYED	72.00	74/01/01				4
MKE	2307	GREAT LAKES	101	-26	PCC	OVERLAYED	72.00	70/01/01				4
MKE	2308	GREAT LAKES	101	-26	PCC	OVERLAYED	67.00	70/01/01				4
MKE	2501	GREAT LAKES	101	-26	PCC	OVERLAYED	80.00	64/01/01	74/01/01			4
MKE	2502	GREAT LAKES	101	-26	PCC	OVERLAYED	89.00	64/01/01	74/01/01			4
MKE	2507	GREAT LAKES	101	-26	PCC	OVERLAYED	47.00	70/01/01				6
MKE	2508	GREAT LAKES	101	-26	PCC	OVERLAYED	64.00	70/01/01				1
LSE	101	GREAT LAKES	104	-37	ACC	OVERLAYED	79.00	44/01/01	78/01/01			4
LSE	201	GREAT LAKES	104	-37	ACC	OVERLAYED	75.00	44/01/01	80/01/01			4
LSE	2403	GREAT LAKES	104	-37	ACC	OVERLAYED	83.00	44/01/01	80/01/01			4
LSE	2404	GREAT LAKES	104	-37	ACC	OVERLAYED	84.00	44/01/01	80/01/01			4
LSE	2503	GREAT LAKES	104	-37	ACC	OVERLAYED	83.00	44/01/01	78/01/01			4
LSE	2504	GREAT LAKES	104	-37	ACC	OVERLAYED	80.00	44/01/01	78/01/01			4
LSE	2603	GREAT LAKES	104	-37	ACC	OVERLAYED	87.00	68/01/01	78/01/01			4
LSE	2604	GREAT LAKES	104	-37	ACC	OVERLAYED	84.00	68/01/01	78/01/01			4
LSE	301	GREAT LAKES	104	-37	ACC	OVERLAYED	80.00	44/01/01	80/01/01			4
LSE	304	GREAT LAKES	104	-37	ACC	OVERLAYED	85.00	44/01/01	78/01/01			4
GRB	1504	GREAT LAKES	99	-31	ACC	ORIGINAL	19.00	48/01/01	00/01/01			4
GRB	1602	GREAT LAKES	99	-31	PCC	ORIGINAL	27.00	84/01/01				4
GRB	1604	GREAT LAKES	99	-31	PCC	ORIGINAL	25.00	77/01/01				7
GRB	1801	GREAT LAKES	99	-31	PCC	ORIGINAL	84.00	80/01/01				6
GRB	1802	GREAT LAKES	99	-31	PCC	ORIGINAL	90.00	82/01/01				1
GRB	201	GREAT LAKES	99	-31	PCC	OVERLAYED	83.00	48/01/01	82/01/01			1
GRB	2601	GREAT LAKES	99	-31	PCC	OVERLAYED	69.00	48/01/01	72/01/01			4
GRB	301	GREAT LAKES	99	-31	PCC	ORIGINAL	95.00	82/01/01				4
GRB	403	GREAT LAKES	99	-31	PCC	OVERLAYED	59.00	66/01/01	78/01/01			4
GRB	501	GREAT LAKES	99	-31	PCC	OVERLAYED	39.00	48/01/01	75/01/01			1
ORD	TW/A	GREAT LAKES	102	-26	PCC	ORIGINAL	70.00	67/01/01				4

Figure 4-15: Pavements Having Tmin>-25°F with Longitudinal & Transverse Cracking

REPORT ON USER SELECTED FIELDS

AIR_ID	PAVE_ID	REGION	TMAX	TMIN	PAVE_COMP	PAVE_TYPE	PCI	DT_CONS	DT_REHAB	PAVE_MAINT1	DSN_MTH	S_03
BWI	10-28/5+00_100+00	EASTERN	105	-7	ACC	OVERLAYED	55.00	48/01/08	73/01/13	CRACK FILLING	AC 150/5320-6C	1
GSP	3-21/5+00_71+00	SOUTHERN	103	-6	ACC	ORIGINAL	.00	01/01/62	01/01/77	JOINT SEAL	AC 150/5320-68	1
GSP	3-21/71+00_76+00	SOUTHERN	103	-6	PCC	ORIGINAL	.00	62/01/01		JOINT SEAL		1
IAD	12-30/29+50_70+00	EASTERN	104	-18	PCC	ORIGINAL	36.00	01/01/62	01/01/00	JOINT SEAL	OTHFR	1
IAD	19L/111+00_145+00	EASTERN	104	-18			.00					1
IAD	1L-19R/30+00_56+00	EASTERN	104	-18			.00					1
IAD	1R/19L/30+00_64+00	EASTERN	104	-18	PCC	ORIGINAL	.00	62/01/01				1
PHX	8/8-1_8-2	WESTERN PACIFIC	118	17	A	ORIGINAL	43.00	80/01/01	00/01/01		AIM	1
FLL	9L/27R_R1	SOUTHERN	98	31	PC	OVERLAYED	71.00	63/01/01	74/01/01			4
FLL	TW/A	SOUTHERN	98	31	PCC	OVERLAYED	80.00	63/01/01	74/01/01			4
JFK	TW-J	EASTERN	104	-2	ACC	ORIGINAL	92.00	79/01/01	00/01/01			1
JFK	TW-K	EASTERN	104	-2	ACC	ORIGINAL	50.00	71/01/01	00/01/01			4
JFK	TW-O	EASTERN	104	-2	ACC	ORIGINAL	76.00	65/01/01	00/01/01			4

Figure 4-16: Pavements Performance Analysis with Potential Causal Factors

REPORT ON USER SELECTED FIELDS

AIR_ID	PAVE_ID	TMAX	TMIN	DT_CONS	DT_REHAB	DT_MAINT	DSN_ACT	EQU_DEP	AIR_CAR	TAXI	GEN_AVI	MILITARY	SB_GRD_SOIL	SB_GRD_CLASS	BASE_SPEC	SB_BASE_SPEC	SURFAC_TH	BASE_TH	SB_BASE_TH	MOIST_CONT	S_03
BWI	10-28/5+00_100+00	105	-7	48/01/08	73/01/13	88/01/01	B 727-200	23532	157829	84868	117954	3047	E-8	F8	P 201	P-154	3.50	5.00	13.00	7.50	1
GSP	3-21/5+00_71+00	103	-6	01/01/62	01/01/77	01/01/00	B-727-200	0	14609	8238	37690	3475	E-9	F6		P-154	4.00	.00	12.00	.00	1
GSP	3-21/71+00_76+00	103	-6	62/01/01				0	14609	8238	37690	3475	E-9			P-154	11.00	.00	9.00	.00	1
IAD	12-30/29+50_70+00	104	18	01/01/62	01/01/00	01/01/00	DC-8	6000	52000	26000	98000	16000	E-7		P-209		15.00	9.00	.00	24.00	1
IAD	19L/111+00_145+00	104	-18					0	0	0	0	0					.00	.00	.00	.00	1
IAD	1L-19R/30+00_56+00	104	-18					0	0	0	0	0					.00	.00	.00	.00	1
IAD	1R/19L/30+00_64+00	104	-18	62/01/01				0	52000	26000	98000	16000					.00	.00	.00	.00	1
MSN	1702	104	-37	79/01/01		00/01/01		0	23256	3520	58685	6509	E-10		P 209		4.00	11.00	.00	.00	4
MSN	1705	104	-37	52/01/01	78/01/01	00/01/01		0	23256	3520	58685	6509			P-209		1.25	6.00	.00	.00	4
MSN	2302	104	-37	42/01/01	80/01/01	00/01/01		0	23256	3520	58685	6509	E-10		P-209	P-154	2.50	12.00	11.50	.00	4
MSN	2502	104	-37	42/01/01	72/01/01	00/01/01		0	23256	3520	58685	6509	E-10		P-209	P 154	3.50	12.00	24.00	.00	4
MSN	2601	104	-37	58/01/01	73/01/01	00/01/01		0	23256	3520	58685	6509	E-9		P 209	P 154	2.50	6.00	21.00	.00	4
MSN	301	104	-37	64/01/01	79/01/01	00/01/01		0	23256	3520	58685	6509	E-10		P 209	P 154	3.00	9.00	10.00	.00	4
MSN	402	104	-37	53/01/01	80/01/01	00/01/01		0	23256	3520	58685	6509	E-10		P-209	P-154	3.00	8.00	12.00	.00	4
MSN	701	104	-37	56/01/01	73/01/01	00/01/01		0	23256	3520	58685	6509	E-10		P-209		3.00	8.00	.00	.00	4
PHX	8/8-1_8-2	118	17	80/01/01	00/01/01	00/01/01	DC-8	0	201492	55937	134382	8059	E-6	FA	P 209	P 154	6.00	10.50	24.00	.00	1
FLL	9L/27R_R1	98	31	63/01/01	74/01/01	00/01/01		0	75393	49998	112329	738	E-1	F1	P-211		2.00	8.00	.00	.00	4
FLL	TW/A	98	31	63/01/01	74/01/01	00/01/01		0	75393	49998	112329	738	E-1	F1	P-211		3.00	9.00	.00	.00	4
MKE	109	101	-26	74/01/01		00/01/01		0	8299	865	3810	418	E-7		P-201		16.00	8.00	8.00	.00	1
MKE	2307	101	-26	70/01/01		00/01/01		0	8299	865	3810	418	E-7				16.00	.00	.00	.00	4
MKE	2308	101	-26	70/01/01		00/01/01		0	8299	865	3810	418	E-7				16.00	.00	.00	.00	4
MKE	2501	101	-26	64/01/01	74/01/01	00/01/01		0	8299	865	3810	418	E-7			P-154	11.00	.00	8.00	.00	4
MKE	2502	101	-26	64/01/01	74/01/01	00/01/01		0	8299	865	3810	418	E-7			P-154	11.00	.00	8.00	.00	4
MKE	2507	101	-26	70/01/01		00/01/01		0	8299	865	3810	418	E-7				16.00	.00	.00	.00	6
MKE	2508	101	-26	70/01/01		00/01/01		0	8299	865	3810	418	E-7				16.00	.00	.00	.00	1
JFK	TW-J	104	-2	79/01/01	00/01/01	00/01/01		0	213192	118519	28208	640					.00	.00	.00	.00	4
JFK	TW-K	104	-2	71/01/01	00/01/01	00/01/01		0	213192	118519	28208	640					.00	.00	.00	.00	4
JFK	TW-O	104	-2	65/01/01	00/01/01	00/01/01		0	213192	118519	28208	640					.00	.00	.00	.00	4
LSE	101	104	-37	44/01/01	78/01/01	00/01/01		0	5354	5938	45893	831	E-3		P-209		3.00	9.00	.00	.00	4
LSE	201	104	-37	44/01/01	80/01/01	00/01/01		0	5354	5938	45893	831	E-3		P-209		3.00	9.00	.00	.00	4
LSE	2403	104	-37	44/01/01	80/01/01	00/01/01		0	5354	5938	45893	831	E-3		P-209		2.00	9.00	.00	.00	4
LSE	2404	104	-37	44/01/01	80/01/01	00/01/01		0	5354	5938	45893	831	E-3		P-209		2.00	9.00	.00	.00	4
LSE	2503	104	-37	44/01/01	78/01/01	00/01/01		0	5354	5938	45893	831	E-3		P-209		3.00	9.00	.00	.00	4
LSE	2504	104	-37	44/01/01	78/01/01	00/01/01		0	5354	5938	45893	831	E-3		P-209		3.00	9.00	.00	.00	4
LSE	2603	104	-37	68/01/01	78/01/01	00/01/01		0	5354	5938	45893	831	E-3		P-209		2.00	8.00	.00	.00	4
LSE	2604	104	-37	68/01/01	78/01/01	00/01/01		0	5354	5938	45893	831	E-3		P-209		2.00	8.00	.00	.00	4
LSE	301	104	-37	44/01/01	80/01/01	00/01/01		0	5354	5938	45893	831	E-3		P-209		2.00	9.00	.00	.00	4
LSE	304	104	-37	44/01/01	78/01/01	00/01/01		0	5354	5938	45893	831	E-3		P-209		5.00	8.00	.00	.00	4
GRB	1504	99	-31	48/01/01	00/01/01	00/01/01		0	0	0	0	0	E-7				.00	.00	.00	.00	4
GRB	1602	99	-31	84/01/01				0	0	0	0	0	E-7				.00	.00	.00	.00	4
GRB	1604	99	-31	77/01/01				0	0	0	0	0	E-7				.00	.00	.00	.00	7
GRB	1801	99	-31	80/01/01				0	0	0	0	0	E-7		P-209		4.00	12.00	.00	.00	4
GRB	1802	99	-31	82/01/01				0	0	0	0	0	E-7		P-209		4.00	12.00	.00	.00	1
GRB	201	99	-31	48/01/01	82/01/01			0	0	0	0	0	E-7				.00	.00	.00	.00	1
GRB	2601	99	-31	48/01/01	72/01/01			0	0	0	0	0	E-7				.00	.00	.00	.00	4
GRB	301	99	-31	82/01/01				0	0	0	0	0	E-7		P-201	P-155	16.00	4.00	10.00	.00	4
GRB	403	99	-31	66/01/01	78/01/01	00/01/01		0	0	0	0	0	E-7				.00	.00	.00	.00	4
GRB	501	99	-31	48/01/01	75/01/01	00/01/01		0	0	0	0	0	E-7		P-201		.00	1.00	.00	.00	1
ORD	TW/A	102	-26	67/01/01				0	0	0	350	0			P-209	P-154	4.00	6.00	19.00	.00	4

5.0 Conclusions and Recommendations

The data collected during this study represents a sample of what should be incorporated into this database for monitoring pavement performance evaluation. The database structure and the capabilities of PPMS are such that additional data items could be incorporated based on user's needs with minor modifications. The collection of as-built data and traffic history for a given pavement section was found to be a difficult task. For making any meaningful interpretations, more data need to be collected and all the data gaps filled in for the current configuration.

The effectiveness of FAA guidelines for design and construction specifications can only be determined with adequate set of data in the database. Also, it is important to ensure the accuracy of the data before deriving any conclusions based on pavement performance data analysis. Effectiveness of guidelines can be analyzed only under the conditions of constant performance monitoring and complete record keeping of environmental factors.

The pavement performance monitoring system configuration, database, and applications software provide full control to the user for data manipulation based on research needs. PPMS provides an effective approach for isolating single or combinations of causal factors leading to a particular distress type and establish commonalities. The users of the system can develop pavement performance statistics. Based on the analysis, system-user can recommend areas for further detailed data collection at a particular site and provide guidance for identifying R&D needs.

Based on the analysis and field experience during the execution of this study and current system configuration, the following recommendations are made.

- Collection of additional data
- Establishing periodic update mechanism for the database and also maintaining historic data
- Software enhancements in the area of graphic outputs and multi-regression analysis
- Dedicated system hardware for ease of future enhancements

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Appendix A

Pavement Performance Monitoring System Data Form

PAVEMENT PERFORMANCE MONITORING SYSTEM DATA FORM

PAVEMENT SPECIFIC DATA

1. **AIRPORT ID** _ _ _ 14. **PAVEMENT ID** _

2. **AIRPORT NAME** _ 3. **STATE** _ _

FAA ADO_____ FAA SITE NO._____

AIRPORT CONTACT_____

TEL NO._____SITE VISIT DATE_____

4. **FAA REGION** (SELECT ONLY ONE)

NEW ENGLAND	_____
EASTERN	_____
SOUTHERN	_____
GREAT LAKES	_____
CENTRAL	_____
SOUTHWEST	_____
NORTHWEST MOUNTAIN	_____
WESTERN-PACIFIC	_____
ALASKAN	_____

5. **SERVICE LEVEL** (SELECT ONLY ONE)

AIR CARRIER	_____
COMMUTER SERVICE	_____
RELIEVER	_____
GENERAL AVIATION	_____

6. **HUB SIZE** (SELECT ONLY ONE)

LARGE	_____
MEDIUM	_____
SMALL	_____
NON-HUB	_____

CLIMATIC CONDITIONS

7. **MAX TEMPERATURE** (IN FAHRENHEIT) _ _ _

8. **MIN TEMPERATURE** (IN FAHRENHEIT) _ _ _

9. **TOTAL PRECIPITATION** (in inches) _ _ _

10. **FROST PENETRATION** (in inches) _ _ _

11. **FROST PROTECTION** (SELECT ONLY ONE)

- CP _____
- LSP _____
- RSP _____
- RSS _____

PAVEMENT DATA

12. **DRAINAGE CONDITION** (SELECT ONLY ONE)

- ADEQUATE _____
- INADEQUATE _____

13. **NUMBER OF DAYS WITH 32 F OR LESS:** _ _ _

15. **PAVEMENT COMPOSITION** (SELECT ONLY ONE)

- ACC _____
- PCC _____
- COMPOSITE _____

16. **PAVEMENT TYPE** (SELECT ONLY ONE)

- ORIGINAL _____
- OVERLAYED _____
- RECONSTRUCTED _____

17. **PAVEMENT CONDITION** (SELECT ONLY ONE)

EXCELLENT	_____
VERY GOOD	_____
GOOD	_____
FAIR	_____
POOR	_____
VERY POOR	_____
FAILED	_____

18. **PCI VALUE** _ _ _ _ _._ _

CONSTRUCTION DATA

19. **DATE OF CONSTRUCTION** (YY/MM/DD)

20. **DATE OF MAJOR REHABILITATION** (YY/MM/DD)

21. **DATE OF RECENT MAINTENANCE** (YY/MM/DD)

22. **PAVEMENT DESIGN METHOD** (SELECT ONLY ONE)

AC 150/5320-6A	_____
AC 150/5320-6B	_____
AC 150/5320-6C	_____
AIM (ASPHALT INSTITUTE MANUAL # 11)	_____
PCAM (PORTLAND CEMENT ASSOCIATION MANUAL)	_____
OTHER	_____

23. **ENTER OTHER DESIGN METHOD:** (IF **OTHER** WAS SELECTED ABOVE THE USER HAS THE OPTION TO EITHER ENTER IN THE DESIGN METHOD OR LEAVE IT BLANK).

_____

_____

OPERATIONS DATA

24. DESIGN AIRCRAFT (SELECT ONLY ONE)

B-707	_____
B-727-100	_____
B-727-200	_____
B-737	_____
B-747	_____
B-757	_____
B-767	_____
DC-8	_____
DC-9	_____
DC-10	_____
L-1011	_____
A-300	_____
DASH-7	_____
CONV-580	_____
YS-11	_____
CONC	_____
OTHER	_____

25. **ENTER OTHER DESIGN AIRCRAFT:** (IF **OTHER** WAS SELECTED ABOVE THE USER HAS THE OPTION TO EITHER ENTER IN THE DESIGN AIRCRAFT OR LEAVE IT BLANK).

_____

_____

26, 27, 28. PAVEMENT MAINTENANCE METHODS: (SELECT A MAXIMUM OF THREE)

CRACK FILLING _____

PATCHING _____

SEAL COAT _____

SLURRY SEAL _____

JOINT SEAL _____

JOINT REPAIR _____

PARTIAL SLAB REPLACEMENT _____

FULL SLAB REPLACEMENT _____

CORNER BREAK REPAIR _____

SLAB JACKING _____

OTHER _____

29. **ENTER OTHER PAVEMENT MAINTENANCE METHOD:** (IF **OTHER** WAS SELECTED ABOVE THE USER HAS THE OPTION TO EITHER ENTER IN THE MAINTENANCE METHOD OR LEAVE IT BLANK).

30. **EQUIVALENT DEPARTURES** (ANNUALLY) _ _ _ _ _ _

ANNUAL AIRCRAFT OPERATIONS:

31. **AIR CARRIER** _ _ _ _ _ _

32. **AIR TAXI/COMMUTER** _ _ _ _ _ _

33. **GENERAL AVIATION** _ _ _ _ _ _

34. **MILITARY** _ _ _ _ _ _

INFRASTRUCTURE COMPOSITION

35. **SUBGRADE SOIL CLASSIFICATION**

FAA SOIL GROUP (SELECT ONLY ONE)	UNIFIED GROUP (SELECT ONLY ONE)
E-1_____	GW_____
E-2_____	GP_____
E-3_____	GU_____
E-4_____	GM_____
E-5_____	GC_____
E-6_____	SW_____
E-7_____	SP_____
E-8_____	SU_____
E-9_____	ML_____
E-10_____	CC_____
E-11_____	OL_____
E-12_____	MH_____
E-13_____	CH_____

36. **FAA SUBGRADE CLASS**

(SELECT ONLY ONE)

FA_____
F1_____
F2_____
F3_____
F4_____
F5_____
F6_____
F7_____
F8_____
F9_____
F10_____

37. **BASE SPECIFICATION** (SELECT ONLY ONE)

P-201 BITUMINOUS BASE COURSE _____
P-206 DRY OR WATER-BOUND MACADAM BASE COURSE * _____
P-208 AGGREGATE BASE COURSE * _____
P-209 CRUSHED AGGREGATE BASE COURSE _____
P-210 CALICHE BASE COURSE * _____
P-211 LIME ROCK BASE COURSE _____
P-212 SHELL BASE COURSE * _____
P-213 SAND-CLAY BASE COURSE * _____
P-214 PENETRATION MACADAM BASE COURSE _____
P-215 COLD LAID BITUMINOUS BASE COURSE _____
P-216 MIXED IN-PLACE BASE COURSE * _____
P-301 SOIL CEMENT BASE COURSE * _____
P-304 CEMENT TREATED BASE COURSE _____

NOTE: * THESE OPTIONS BECOME SUBBASE SPECIFICATION OPTIONS FOR AIRCRAFT WEIGHTS IN EXCESS OF 30,000 POUNDS.

38. **SUBBASE SPECIFICATION** (SELECT ONLY ONE)

P-154 SUBBASE COURSE _____

P-155 LIME TREATED SUBBASE COURSE _____

P-206 DRY OR WATER-BOUND MACADAM SUBBASE COURSE _____

P-208 AGGREGATE SUBBASE COURSE _____

P-210 CALICHE SUBBASE COURSE _____

P-212 SHELL SUBBASE COURSE _____

P-213 SAND-CLAY SUBBASE COURSE _____

P-216 MINED IN-PLACE SUBBASE COURSE _____

P-301 SOIL CEMENT SUBBASE COURSE _____

39. **SURFACE SPECIFICATION** (SELECT ONLY ONE)

P-401 BITUMINOUS SURFACE COURSE _____

P-402 POROUS FRICTION SURFACE COURSE _____

P-408 BLENDED NATURAL LIMESTONE, ROCK, ASPHALT AND SAND BITUMINOUS SURFACE COURSE _____

P-501 PCC PAVEMENT SURFACE COURSE _____

40. **BASE THICKNESS** (in inches) -----.--

41. **SUBBASE THICKNESS** (in inches) -----.--

42. **SURFACE THICKNESS** (in inches) -----.--

43. **CALIFORNIA BEARING RATIO** (CBR) (VALUES FROM 0 TO 99.99) ---

44. **K VALUE** (in pci) (VALUES FROM 0 TO 400) ------.--

45. **LIQUID LIMIT** (VALUES FROM 0 TO 99.99) -----.--

46. **PLASTICITY INDEX** (VALUES FROM 0 TO 99.99) -----.--

47. **MOISTURE CONTENT** (VALUES FROM 0 TO 99.99) -----.--

48. **WATER TABLE** (SELECT ONLY ONE)

LOW _____

HIGH _____

49. **DEPTH OF COMPACTION** (in inches) -----.--

50. **MAXIMUM DENSITY** (VALUES FROM O TO 99.99) -----.--

51, 52. **TYPES OF CEMENT** (SELECT A MAXIMUM OF TWO)

I	_____
IA	_____
II	_____
IIA	_____
III	_____
IIIA	_____
IP	_____
IPA	_____
IS	_____
ISA	_____

53. **REINFORCEMENT** (SELECT ONLY ONE)

A184	_____
A185	_____
A497	_____
A704	_____

54,55,56. **TYPES OF JOINT DESIGNS** (SELECT A MAXIMUM OF 3 CODES)

JOINT DESIGNS	CODES	
TYPE A DOWELED	A	_____
TYPE B THICKENED EDGE	B	_____
TYPE C KEYED	C	_____
TYPE D DOWELED	D	_____
TYPE E HINGED	E	_____
TYPE F DOWELED	F	_____
TYPE G HINGED	G	_____
TYPE H DUMMY	H	_____

57. **JOINT SEALANT**_____

58. **ADDITIVES**_____

DISTRESS TYPE DATA

AIRPORT ID_____ PAVEMENT ID_____

		SEVERITY LEVEL			
	SEVERITY	L	M	H	DENSITY
BLOW-UP	59 ____	____	____	____	60 ____
CORNER BREAK	61 ____	____	____	____	62 ____
LONGITUDINAL/TRANSVERSE/	63 ____	____	____	____	64 ____
"D" CRACK	65 ____	____	____	____	66 ____
JOINT SEAL DAMAGE	67 ____	____	____	____	68 ____
PATCHING	69 ____	____	____	____	70 ____
POPOUTS	71 ____	____	____	____	72 ____
PUMPING	73 ____	____	____	____	74 ____
SCALING/MAP CRACK	75 ____	____	____	____	76 ____
SETTLEMENT FAULT	77 ____	____	____	____	78 ____
SHATTERED SLAB	79 ____	____	____	____	80 ____
SHRINKAGE CRACKS	81 ____	____	____	____	82 ____
SPALLING --- JOINTS	83 ____	____	____	____	84 ____
SPALLING --- CORNER	85 ____	____	____	____	86 ____
ALLIGATOR CRACKING	87 ____	____	____	____	88 ____
BLEEDING	89 ____	____	____	____	90 ____
BLOCK CRACKING	91 ____	____	____	____	92 ____
CORRUGATION	93 ____	____	____	____	94 ____
DEPRESSION	95 ____	____	____	____	96 ____
JET BLAST	97 ____	____	____	____	98 ____
JOINT REFLECTION	99 ____	____	____	____	100 ____
OIL SPILLAGE	101 ____	____	____	____	102 ____
POLISHED AGGREGATE	103 ____	____	____	____	104 ____
RAVELLING/WEATHERING	105 ____	____	____	____	106 ____
RUTTING	107 ____	____	____	____	108 ____
SHOVING FROM PCC	109 ____	____	____	____	110 ____
SLIPPAGE CRACKING	111 ____	____	____	____	112 ____
SWELL	113 ____	____	____	____	114 ____
PAVING LANE JOINTS	115 ____	____	____	____	116 ____
OTHER	117 ____	____	____	____	118 ____

132 - 133. **DISTRESS TYPE COMMENTS:**

_____

_____

LOW	MED	HIGH	SEVERITY
			0
L	-	-	1
-	M	-	2
-	-	H	3
L	M	-	4
L	-	H	5
-	M	H	6
L	M	H	7

COMMENTS (ANY PERTINENT INFORMATION NOT COVERED IN THE CONTEXT OF THIS DATABASE SHOULD BE ENTERED HERE).

119 & 120. **DESIGN COMMENTS**

121 & 122. **MAINTENANCE COMMENTS**

123 & 124 **CLIMATIC CONDITION COMMENTS**

125 & 126. **AIRCRAFT OPERATIONS COMMENTS**

127 - 131. **GENERAL COMMENTS**

Appendix B

Ad-hoc Reports

COMPREHENSIVE REPORT

AIR_ID	PAVE_ID	STATE	PAVE_COMP	PAVE_TYPE	TMAX	TMIN	TOT_PRECIP	DT_CONS	DSN_MTH	DSN_ACT	EQU_DEP	SB_GRD_SOIL	SB_GRD	_CLASS	BASE_SPEC	SB_BASE_SPEC
ACY	R/W4-22/29+19_61+44	NJ	PCC	ORIGINAL	106	-11	0	85/01/01	AC 150/5320-6C	B-727-200	4000	E-1	F3		P-209	P-213
ATL	8L-26R/0+00_90+00	GA	PCC	ORIGINAL	105	-5	49	84/01/09	AC 150/5320-6C	B-727-200	67811	E-8	FA		P-301	P-301
ATL	E/FF_26L	GA	PCC	ORIGINAL	105	-5	49	69/01/01	AC 150/5320-6B	DC-8	358000	E-13	F5		P-301	P-208
ATL	RW/8R-26L	GA	PCC	ORIGINAL	105	-5	49	75/01/01	AC 150/5320-6A	CONC	5000	E-13	F10		P-304	P-216
ATL	TW/E(13)	GA	PCC	ORIGINAL	105	-5	49	75/01/01	AC 150/5320-6A	CONV-580	10000	GW	F6		P-304	P-212
ATL	TW/L(2)	GA	PCC	ORIGINAL	105	-5	49	75/01/01	AC 150/5320-6C	OTHER	10000	E-11	F9		P-304	P-216
ATL	TW/L(3)	GA	PCC	ORIGINAL	105	-5	49	75/01/01	OTHER	B-767	200	CH	F3		P-304	P-210
ATL	TW/M(6)	GA	PCC	ORIGINAL	105	-5	49	75/01/01	OTHER	B-747	4500	SW	F4		P-304	P-206
ATL	TW/V-V(1)	GA	PCC	ORIGINAL	105	-5	49	75/01/01	AC 150/5320-6C	B-757	5000	ML	FA		P-304	P-155
BWI	10-28/5+00_100+00	MD	ACC	OVERLAYED	105	-7	42	48/01/08	AC 150/5320-6C	B-727-200	23532	E-8	F8		P-201	P-154
DRA	2-20/ALL	CO	ACC	RECONSTRUCTED	93	-30	12			B-737	1027	E-7	F7		P-201	
GSP	3-21/5+00_71+00	SC	ACC	ORIGINAL	103	-6	51	01/01/62	AC 150/5320-6B	B-727-200	0	E-9	F6			P-154
GSP	3-21/71+00_76+00	SC	PCC	ORIGINAL	103	-6	51	62/01/01			0	E-9				P-154
IAD	10L/111+00_145+00	DC	PCC	ORIGINAL	104	-18	40	62/01/01			0	E-9				P-154
IAD	12-30/29+50_70+00	DC	PCC	ORIGINAL	104	-18	40	01/01/62	OTHER	DC-8	6000	E-7			P-209	
IAD	19L/111+00+145+00	DC	PCC	RECONSTRUCTED	104	-18	40				0					
IAD	19L/111+00_145+00	DC			104	-18	40				0					
IAD	1L-19R/30+00_56+00	DC			104	-18	40				0					
IAD	1R-19L/30+00_64+00	DC	PCC	ORIGINAL	104	-18	40	62/01/01			0					
IAD	1R/19L/30+00_64+00	DC	PCC	ORIGINAL	104	-18	40	62/01/01			0					
LGB	12-30/ALL	CA	ACC	OVERLAYED	111	25	12	53/01/01	AC 150/5320-6B	B-727-200	0	E-6	F4			
MSN	101	WI	ACC	ORIGINAL	104	-37	31	80/01/01			0	E-10			P-201	
MSN	13-31/0+00_58+46	WI	ACC	OVERLAYED	104	-37	31	00/01/01		B-727-100	0				P-209	P-154
MSN	1702	WI	ACC	ORIGINAL	104	-37	31	79/01/01			0	E-10			P-209	
MSN	1705	WI	ACC	OVERLAYED	104	-37	31	52/01/01			0				P-209	
MSN	2302	WI	ACC	OVERLAYED	104	-37	31	42/01/01			0	E-10			P-209	P-154
MSN	2502	WI	ACC	OVERLAYED	104	-37	31	42/01/01			0	E-10			P-209	P-154
MSN	2601	WI	ACC	OVERLAYED	104	-37	31	58/01/01			0	E-9			P-209	P-154
MSN	2603	WI	ACC	OVERLAYED	104	-37	31	42/01/01			0	E-10			P-209	P-154
MSN	301	WI	ACC	OVERLAYED	104	-37	31	64/01/01			0	E-10			P-209	P-154
MSN	402	WI	ACC	OVERLAYED	104	-37	31	53/01/01			0	E-10			P-209	P-154
MSN	701	WI	ACC	OVERLAYED	104	-37	31	56/01/01			0	E-10			P-209	
PHX	8/8-1_8-2	AZ	ACC	ORIGINAL	118	17	7	80/01/01	AIM	DC-8	0	E-6	FA		P-209	P-154
CYS	12-30/ALL	WY	COMPOSITE	RECONSTRUCTED	100	-34	13	42/01/01			0					
CLT	18R-36L/32+00_132+00	NC	PCC	ORIGINAL	104	-3	43	79/01/01	AC 150/5320-6A	DC-8	26822	E-9			P-304	
AAA	A	NC	PCC	ORIGINAL	119	-15	4	01/01/69	AC 150/5320-6C	B-707	5000	E-1	F2		P-201	P-155
CTL	18R-36L/32+00_132+00				0	0	0				0					
DFW	TWJ-8	TX	PCC	ORIGINAL	117	4	29	74/01/01			0	CH				P-155
DFW	TWK-11	TX	PCC	ORIGINAL	113	4	29	74/01/01			0	CH				P-155
DFW	TWW31-14	TX	PCC	ORIGINAL	113	4	29	74/01/01			0	CH				P-155
FLL	9L/27R_R1	FL	PCC	OVERLAYED	98	31	58	63/01/01			0	E-1	F1		P-211	
FLL	TW/A	FL	PCC	OVERLAYED	98	31	58	63/01/01			0	E-1	F1		P-211	
MKE	104	WI	PCC	OVERLAYED	101	-26	31	47/01/01			0	E-7				P-154
MKE	109	WI	PCC	OVERLAYED	101	-26	31	74/01/01			0	E-7			P-201	
MKE	2307	WI	PCC	OVERLAYED	101	-26	31	70/01/01			0	E-7				
MKE	2308	WI	PCC	OVERLAYED	101	-26	31	70/01/01			0	E-7				
MKE	2407	WI	PCC	OVERLAYED	101	-26	31	41/01/01			0	E-7			P-209	
MKE	2408	WI	PCC	OVERLAYED	101	-26	31	41/01/01			0	E-7			P-209	
MKE	2409	WI	PCC	OVERLAYED	101	-26	31	45/01/01			0	E-7			P-209	P-154
MKE	2501	WI	PCC	OVERLAYED	101	-26	31	64/01/01			0	E-7				P-154
MKE	2502	WI	PCC	OVERLAYED	101	-26	31	64/01/01			0	E-7				P-154

COMPREHENSIVE REPORT

AIR_ID	PAVE_ID	STATE	PAVE_COMP	PAVE_TYPE	TMAX	TMIN	TOT_PRECIP	DT_CONS	DSN_MTH	DSN_ACT	EQU_DEP	SB_GRD_SOIL	SB_GRD	CLASS	BASE_SPEC	SB_BASE_SPEC
MKE	2507	WI	PCC	OVERLAYED	101	-26	31	70/01/01			0	E-7				
MKE	2508	WI	PCC	OVERLAYED	101	-26	31	70/01/01			0	E-7				
MKE	2634	WI	PCC	OVERLAYED	101	-26	31	67/01/01			0	E-7				P-154
JFK	TW J	NY	ACC	ORIGINAL	104	-2	42	79/01/01			0					
JFK	TW K	NY	ACC	ORIGINAL	104	-2	42	71/01/01			0					
JFK	TW O	NY	ACC	ORIGINAL	104	-2	42	65/01/01			0					
JFK	TW P	NY	ACC	ORIGINAL	104	-2	42	62/01/01			0					
LSE	101	WI	ACC	OVERLAYED	104	-37	30	44/01/01			0	E-3			P-209	
LSE	201	WI	ACC	OVERLAYED	104	-37	30	44/01/01			0	E-3			P-209	
LSE	2403	WI	ACC	OVERLAYED	104	-37	30	44/01/01			0	E-3			P-209	
LSE	2404	WI	ACC	OVERLAYED	104	-37	30	44/01/01			0	E-3			P-209	
LSE	2503	WI	ACC	OVERLAYED	104	-37	30	44/01/01			0	E-3			P-209	
LSE	2504	WI	ACC	OVERLAYED	104	-37	30	44/01/01			0	E-3			P-209	
LSE	2603	WI	ACC	OVERLAYED	104	-37	30	68/01/01			0	E-3			P-209	
LSE	2604	WI	ACC	OVERLAYED	104	-37	30	68/01/01			0	E-3			P-209	
LSE	301	WI	ACC	OVERLAYED	104	-37	30	44/01/01			0	E-3			P-209	
LSE	304	WI	ACC	OVERLAYED	104	-37	30	44/01/01			0	E-3			P-209	
GRB	1504	WI	ACC	ORIGINAL	99	-31	28	48/01/01			0	E-7				
GRB	1602	WI	PCC	ORIGINAL	99	-31	28	84/01/01			0	E-7				
GRB	1604	WI	PCC	ORIGINAL	99	-31	28	77/01/01			0	E-7				
GRB	1801	WI	PCC	ORIGINAL	99	-31	28	80/01/01			0	E-7			P-209	
GRB	1802	WI	PCC	ORIGINAL	99	-31	28	82/01/01			0	E-7			P-209	
GRB	201	WI	PCC	OVERLAYED	99	-31	28	48/01/01			0	E-7				
GRB	2601	WI	PCC	OVERLAYED	99	-31	28	48/01/01			0	E-7				
GRB	301	WI	PCC	ORIGINAL	99	-31	28	82/01/01			0	E-7			P-201	P-155
GRB	403	WI	PCC	OVERLAYED	99	-31	28	66/01/01			0	E-7				
GRB	501	WI	PCC	OVERLAYED	99	-31	28	48/01/01			0	E-7			P-201	
SAN	9-27/0+00_87+00	CA	PCC	OVERLAYED	115	29	9	44/01/01		DC-10	0	E-4				
SPI	12-30	IL	PCC	OVERLAYED	112	-22	34	47/01/01	AC 150/5320-6B	B-727-200	0				P-201	P-154
PIA	12/30	IL	PCC	OVERLAYED	103	-25	35	81/01/01	AC 150/5320-6C	B-727-200	0	MI			P-209	
FWA	RW 4-22	IN	PCC	OVERLAYED	103	-21	34	68/08/01		B-727-200	7636					
RFD	6-24/28+30_46+63	IL	PCC	OVERLAYED	103	-27	37			B-727-200	3000				P-209	P-154
RFD	6-24/6+00_28+30	IL	PCC	OVERLAYED	103	-27	37			B-727-200	3000				P-209	P-154
MDW	13R-31L/0+00_50+00	IL	PCC	OVERLAYED	102	-26	33	00/01/01			7200				P-201	P-154
MDW	13R-31L/50+00_62+63	IL	PCC	OVERLAYED	102	-26	33	00/01/01		B-727-200	3000				P-201	P-154
ORD	RW 3	IL	PCC	ORIGINAL	102	-26	33	82/01/01	AC 150/5320-6C	DC-9	1200				P-201	P-208
ORD	TW A	IL	PCC	ORIGINAL	102	-26	33	67/01/01			0				P-209	P-154
IND	4L-22R	IN	PCC	OVERLAYED	104	-21	39	56/01/01		DC-10	0	E-6			P-201	
ZDV	2/20	CO	PCC	OVERLAYED	105	-23	8	51/01/01		B-737	0	E-7			P-208	P-154
CAE	5/23	SC	PCC	OVERLAYED	107	4	49	41/01/01	OTHER	OTHER	3000	GW	F2		P-209	P-206
DEN	RW 17L-35R	CO	PCC	ORIGINAL	104	-30	15	75/01/01	AC 150/5320-6C	B-727-200	0	E-2				

REPORT ON CLIMATIC CONDITIONS

AIR_ID	PAVE_ID	TMAX	TMIN	TOT_PRECIP	FROST_PENE	MEAN_ANN_32
ACY	R/W4-22/29+19_61+44	106	-11	0	10	110
ATL	8L-26R/0+00_90+00	105	-5	49	4	57
ATL	E/FF_26L	105	-5	49	4	57
ATL	RW/8R-26L	105	-5	49	4	57
ATL	TW/E(13)	105	-5	49	4	57
ATL	TW/L(2)	105	-5	49	4	57
ATL	TW/L(3)	105	-5	49	4	57
ATL	TW/M(6)	105	-5	49	4	57
ATL	TW/V-V(1)	105	-5	49	4	57
BWI	10-28/5+00_100+00	105	-7	42	12	98
DRA	2-20/ALL	93	-30	12	30	170
GSP	3-21/5+00_71+00	103	-6	51	5	67
GSP	3-21/71+00_76+00	103	-6	51	5	67
IAD	10L/111+00_145+00	104	-18	40	15	116
IAD	12-30/29+50_70+00	104	-18	40	15	116
IAD	19L/111+00+145+00	104	-18	40	15	116
IAD	19L/111+00_145+00	104	-18	40	15	116
IAD	1L-19R/30+00_56+00	104	-18	40	15	116
IAD	1R-19L/30+00_64+00	104	-18	40	15	116
IAD	1R/19L/30+00_64+00	104	-18	40	15	116
LGB	12-30/ALL	111	25	12	0	1
MSN	101	104	-37	31	38	163
MSN	13-31/0+00_58+46	104	-37	31	38	163
MSN	1702	104	-37	31	38	163
MSN	1705	104	-37	31	38	163
MSN	2302	104	-37	31	38	163
MSN	2502	104	-37	31	38	163
MSN	2601	104	-37	31	38	163
MSN	2603	104	-37	31	38	163
MSN	301	104	-37	31	38	163
MSN	402	104	-37	31	38	163
MSN	701	104	-37	31	38	163
PHX	B/B-1_B-2	118	17	7	0	9
CYS	12-30/ALL	100	-34	13	24	172
CLT	18R-36L/32+00_132+00	104	-3	43	4	70
CTL	18R-36L/32+00_132+00	0	0	0	0	0
DFW	TWJ-8	113	4	29	6	41
DFW	TWK-11	113	4	29	6	41
DFW	TWW31-14	113	4	29	6	41
FLL	9L/27R_R1	98	31	58	1	0
FLL	TW/A	98	31	58	1	0
MKE	104	101	-26	31	40	143
MKE	109	101	-26	31	40	143
MKE	2307	101	-26	31	40	143
MKE	2308	101	-26	31	40	143
MKE	2407	101	-26	31	40	143
MKE	2408	101	-26	31	40	143
MKE	2409	101	-26	31	40	143
MKE	2501	101	-26	31	40	143
MKE	2502	101	-26	31	40	143
MKE	2507	101	-26	31	40	143

REPORT ON CLIMATIC CONDITIONS

AIR_ID	PAVE_ID	TMAX	TMIN	TOT_PRECIP	FROST_PENE	MEAN_ANN_32
MKE	2508	101	-26	31	40	143
MKE	2604	101	-26	31	40	143
JFK	TW-J	104	-2	42	25	80
JFK	TW-K	104	-2	42	25	80
JFK	TW-O	104	-2	42	25	80
JFK	TW-P	104	-2	42	25	80
LSE	101	104	-37	30	45	151
LSE	201	104	-37	30	45	151
LSE	2403	104	-37	30	45	151
LSE	2404	104	-37	30	45	151
LSE	2503	104	-37	30	45	151
LSE	2504	104	-37	30	45	151
LSE	2603	104	-37	30	45	151
LSE	2604	104	-37	30	45	151
LSE	301	104	-37	30	45	151
LSE	304	104	-37	30	45	151
GRB	1504	99	-31	28	0	162
GRB	1602	99	-31	28	0	162
GRB	1604	99	-31	28	0	162
GRB	1801	99	-31	28	0	162
GRB	1802	99	-31	28	0	162
GRB	201	99	-31	28	0	162
GRB	2601	99	-31	28	0	162
GRB	301	99	-31	28	0	162
GRB	403	99	-31	28	0	162
GRB	501	99	-31	28	0	162
SAN	9-27/0=00_87+00	115	29	9	0	0
SPI	12-30	112	-22	34	20	118
PIA	12/30	103	-25	35	25	130
FWA	RW 4-22	103	-21	34	0	131
RFD	6-24/28+30_46+63	103	-27	37	0	144
RFD	6-24/6+00_28+30	103	-27	37	0	144
MDW	13R-31L/0+00_50+00	102	-26	33	42	133
MDW	13R-31L/50+00_62+63	102	-26	33	42	133
ORD	RW 23	102	-26	33	45	133
ORD	TW/A	102	-26	33	45	133
IND	4L-22R	104	-21	39	36	119
ZDV	2/20	105	-23	8	0	134
CAE	5/23	107	4	49	4	63
DEN	RW 17L-35R	104	-30	15	45	159

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REPORT ON AIRCRAFT OPERATIONS

AIR_ID	PAVE_ID	SERVICE	HUB	DSN_ACT	EQU_DEP	AIR_CAR	TAXI	GEN_AVI	MILITARY
ACY	R/W4-22/29+19_61+44	COMMUTER SERVICE	MEDIUM	B-727-200	40 00	500	24000	48000	26000
ATL	8L-26R/0+00_90+00	AIR CARRIER	LARGE	B-727-200	678 11	521500	87170	38720	1540
ATL	E/FF_26L	AIR CARRIER	LARGE	DC-8	3580 00	521500	87170	38720	1540
ATL	RW/8R-26L	AIR CARRIER	LARGE	CONC	50 00	521500	87170	38720	1540
ATL	TW/E(13)	AIR CARRIER	LARGE	CONV-580	100 00	521500	87170	38720	1540
ATL	TW/L(2)	AIR CARRIER	LARGE	OTHER	100 00	521500	87170	38720	1540
ATL	TW/L(3)	AIR CARRIER	LARGE	B-767	2 00	521500	87170	38720	1540
ATL	TW/M(6)	AIR CARRIER	LARGE	B-747	45 00	521500	87170	38720	1540
ATL	TW/V-V(1)	AIR CARRIER	LARGE	B-757	50 00	521500	87170	38720	1540
BWI	10-28/5+00_100+00	AIR CARRIER	MEDIUM	B-727-200	235 32	157829	84868	11795	3947
DRA	2-20/ALL	AIR CARRIER	NON-HUB	B-737	10 27	63332	10800	60000	500
GSP	3-21/5+00_71+00	AIR CARRIER	SMALL	B-727-200	0	14609	8238	37690	3475
GSP	3-21/71+00_76+00	AIR CARRIER	SMALL		0	14609	8238	37690	3475
IAD	10L/111+00_145+00	AIR CARRIER	LARGE		0	0	8238	37690	3475
IAD	12-30/29+50_70+00	AIR CARRIER	LARGE	DC-8	60 00	52000	26000	98000	16000
IAD	19L/111+00+145+00	AIR CARRIER	LARGE		0	0	0	0	0
IAD	19L/111+00_145+00	AIR CARRIER	LARGE		0	0	0	0	0
IAD	1L-19R/30+00_56+00	AIR CARRIER	LARGE		0	0	0	0	0
IAD	1R-19L/30+00_64+00	AIR CARRIER	LARGE		0	521500	87170	38720	1540
IAD	1R/19L/30+00_64+00	AIR CARRIER	LARGE		0	52000	26000	98000	16000
LGB	12-30/ALL	AIR CARRIER	LARGE	B-727-200	0	12000	0	0	0
MSN	101	AIR CARRIER	SMALL		0	23256	3520	58685	6509
MSN	13-31/0+00_58+46	AIR CARRIER	SMALL	B-727-100	0	0	0	0	0
MSN	1702	AIR CARRIER	SMALL		0	23256	3520	58685	6509
MSN	1705	AIR CARRIER	SMALL		0	23256	3520	58685	6509
MSN	2302	AIR CARRIER	SMALL		0	23256	3520	58685	6509
MSN	2502	AIR CARRIER	SMALL		0	23256	3520	58685	6509
MSN	2601	AIR CARRIER	SMALL		0	23256	3520	58685	6509
MSN	2603	AIR CARRIER	SMALL		0	23256	3520	58685	6509
MSN	301	AIR CARRIER	SMALL		0	23256	3520	58685	6509
MSN	402	AIR CARRIER	SMALL		0	23256	3520	58685	6509
MSN	701	AIR CARRIER	SMALL		0	23256	3520	58685	6509
PHX	8/8-1_8-2	AIR CARRIER	MEDIUM	DC-8	0	201492	55937	134382	8059
CYS	12-30/ALL	AIR CARRIER	NON-HUB		0	0	12369	43500	12692
CLT	18R-36L/32+00_132+00	AIR CARRIER	MEDIUM	DC-8	268 22	153647	63735	87324	3739
CTL	18R-36L/32+00_132+00				0	0	0	0	0
DFW	TWJ-8	AIR CARRIER	LARGE		0	390869	89196	22918	217
DFW	TWK-11	AIR CARRIER	LARGE		0	390869	89196	22918	217
DFW	TWW31-14	AIR CARRIER	LARGE		0	390869	89196	22918	217
FLL	9L/27R_R1	AIR CARRIER	LARGE		0	75393	49998	112329	738
FLL	TW/A	AIR CARRIER	LARGE		0	75393	49998	112329	738
MKE	104	AIR CARRIER	MEDIUM		0	8299	865	3810	418
MKE	109	AIR CARRIER	MEDIUM		0	8299	865	3810	418
MKE	2307	AIR CARRIER	MEDIUM		0	8299	865	3810	418
MKE	2308	AIR CARRIER	MEDIUM		0	8299	865	3810	418
MKE	2407	AIR CARRIER	MEDIUM		0	8299	865	3810	418
MKE	2408	AIR CARRIER	MEDIUM		0	8299	865	3810	418
MKE	2409	AIR CARRIER	MEDIUM		0	8299	865	3810	418
MKE	2501	AIR CARRIER	MEDIUM		0	8299	865	3810	418
MKE	2502	AIR CARRIER	MEDIUM		0	8299	865	3810	418
MKE	2507	AIR CARRIER	MEDIUM		0	8299	865	3810	418

REPORT ON AIRCRAFT OPERATIONS

AIR_ID	PAVE_ID	SERVICE	HUB	DSN_ACT	EQU_DEP	AIR_CAR	TAXI	GEN_AVI	MILITARY
MKE	2508	AIR CARRIER	MEDIUM		0	8299	865	3810	418
MKE	2604	AIR CARRIER	MEDIUM		0	8299	865	3810	418
JFK	TW-J	AIR CARRIER	LARGE		0	213192	118519	28208	640
JFK	TW-K	AIR CARRIER	LARGE		0	213192	118519	28208	640
JFK	TW-O	AIR CARRIER	LARGE		0	213192	118519	28208	640
JFK	TW-P	AIR CARRIER	LARGE		0	213192	118519	28208	640
LSE	101	GENERAL AVIATION	NON-HUB		0	5354	5938	45893	831
LSE	201	GENERAL AVIATION	NON-HUB		0	5354	5938	45893	831
LSE	2403	GENERAL AVIATION	NON-HUB		0	5354	5938	45893	831
LSE	2404	GENERAL AVIATION	NON-HUB		0	5354	5938	45893	831
LSE	2503	GENERAL AVIATION	NON-HUB		0	5354	5938	45893	831
LSE	2504	GENERAL AVIATION	NON-HUB		0	5354	5938	45893	831
LSE	2603	GENERAL AVIATION	NON-HUB		0	5354	5938	45893	831
LSE	2604	GENERAL AVIATION	NON-HUB		0	5354	5938	45893	831
LSE	301	GENERAL AVIATION	NON-HUB		0	5354	5938	45893	831
LSE	304	GENERAL AVIATION	NON-HUB		0	5354	5938	45893	831
GRB	1504	GENERAL AVIATION	SMALL		0	0	0	0	0
GRB	1602	GENERAL AVIATION	SMALL		0	0	0	0	0
GRB	1604	GENERAL AVIATION	SMALL		0	0	0	0	0
GRB	1801	GENERAL AVIATION	SMALL		0	0	0	0	0
GRB	1802	GENERAL AVIATION	SMALL		0	0	0	0	0
GRB	201	GENERAL AVIATION	SMALL		0	0	0	0	0
GRB	2601	GENERAL AVIATION	SMALL		0	0	0	0	0
GRB	301	GENERAL AVIATION	SMALL		0	0	0	0	0
GRB	403	GENERAL AVIATION	SMALL		0	0	0	0	0
GRB	501	GENERAL AVIATION	SMALL		0	0	0	0	0
SAN	9-27/0=00_87+00	AIR CARRIER	MEDIUM	DC-10	0	89815	25385	35613	2883
SPI	12-30	AIR CARRIER	SMALL	B-727-200	0	12178	11011	72?46	9068
PIA	12/30	GENERAL AVIATION	SMALL	B-727-200	0	19123	4553	33504	6252
FWA	RW 4-22	GENERAL AVIATION	SMALL	B-727-200	76 36	20422	2080	65864	8600
RFD	6-24/28+30_46+63	GENERAL AVIATION	NON-HUB	B-727-200	30 00	4466	2599	61839	1370
RFD	6-24/6+00_28+30	GENERAL AVIATION	NON-HUB	B-727-200	30 00	4466	2599	61839	1370
MDW	13R-31L/0+00_50+00	GENERAL AVIATION	LARGE		72 00	40908	33712	129307	5082
MDW	13R-31L/50+00_62+63	GENERAL AVIATION	LARGE	B-727-200	30 00	40908	33712	129307	5082
ORD	RW 23	GENERAL AVIATION	LARGE	DC-9	12 00	0	0	350	0
ORD	TW/A	GENERAL AVIATION	LARGE		0	0	0	350	0
IND	4L-22R	AIR CARRIER	MEDIUM	DC-10	0	63125	44761	78513	2778
ZDV	2/20	GENERAL AVIATION	NON-HUB	B-737	0	62	62	79	0
CAE	5/23	AIR CARRIER	SMALL	OTHER	30 00	18662	13232	75817	10708
DEN	RW 17L-35R	AIR CARRIER	LARGE	B-727-200	0	325964	89338	70342	1653

DESIGN REPORT

AIR_ID	PAVE_ID	PAVE_COND	PAVE_TYPE	DSN_ACT	EQU_DEP	SB_GRD_ROIL	SB_GRD_CLASS	BASE_SPEC	SB_BASE_SPEC	BASE_TH	SB_BASE_TH	SUB	FAC_TH	CBR	K_VALUE	LWD_LIMIT	PLASTI_NBR	MOIST_COST	CEMENT1	REINFORCE	JT	_DESIGN1	JT_SEALANT	ADDITIVES
ACY	R/VA-22/29+19_61+44	PCC	ORIGINAL	B-727-200	6000	E-1	F3	P-209	P-213	6.00	3.00		14.00	20	167.00	80.00	50.00	90.00	IA	A184	A		SEALANT1	ADDITIVES
ATL	8L-26R/0+00_90+00	PCC	ORIGINAL	B-727-200	67811	E-8	FA	P-301	P-301	6.00	6.00		16.00	30	180.00	25.00	90.00	95.61	IPA	A204	B		SUPER SEAL	NU CEM -SLA
ATL	E/9R 26L	PCC	ORIGINAL	DC-8	354000	E-13	F5	P-301	P-208	6.00	12.00		16.00	22	150.00	35.00	95.00	75.00	IA	A185	B		SEALENT1111	NEW ADDITIVE
ATL	8W/8E-26L	PCC	ORIGINAL	CONC	5000	E-13	F10	P-304	P-216	6.00	9.00		16.00	100	50.00	99.99	99.00	33.00	IB	A497	A		SEAL NEW	ADD NEW
ATL	TW/E(13)	PCC	ORIGINAL	CONV-580	10000	GW	F6	P-304	P-212	6.00	12.00		16.00	100	60.00	99.98	99.99	99.99	IIA	A184	B		NEW JOINT	NEW ADDITIV
ATL	TW/L(2)	PCC	ORIGINAL	OTHER	10000	E-11	F9	P-304	P-216	6.00	30.00		16.00	99	600.00	22.98	45.72	33.00	I	A204	B		NEW JOINT	NEW ADDITIV
ATL	TW/L(3)	PCC	ORIGINAL	B-767	200	CW	F3	P-304	P-210	6.00	23.00		16.00	38	175.00	75.00	25.00	19.01	IBA	A185	B		NEW SEAL	OLD ADD
ATL	TW/M(6)	PCC	ORIGINAL	B-747	6500	SW	F4	P-304	P-206	6.00	5.00		16.00	33	250.00	76.90	33.10	30.90	I	A204	B		NEW SEALANT	OLD ADDITIVE
ATL	TW/W-W(1)	PCC	ORIGINAL	B-757	5000	RL	FA	P-304	P-159	6.00	7.00		16.00	43	75.00	33.00	99.00	1.00	IA	A184	B		NEW SEALANT	NEW ADDITIVE
BWI	10-28L/5+00_100+00	ACC	OVERLAYED	B-727-200	23532	E-8	F8	P-201	P-154	5.00	13.00		3.50	15	170.00	16.00	4.00	7.50	IA	A185	C		SEALANT	ADDITIVES
BWA	2-20/ALL	ACC	RECONSTRUCTED	B-737	1627	E-7	F7	P-201		16.00	.00		4.00	7	.00	27.50	15.50	14.50						
GSP	3-21/5+00_71+00	ACC	ORIGINAL	B-727-200	0	E-9	F6		P-154	.00	12.00		4.00	10	.00	25.00	6.00	.00						
GSP	3-21/71+00_76+00	PCC	ORIGINAL		0	E-9			P-154	.00	9.00		11.00	0	.00	.00	.00	.00			A			
IAD	10R/111+00_145+00	PCC	ORIGINAL		0	E-9			P-154	.00	9.00		11.00	0	.00	.00	.00	.00			A			
IAD	12-30/29+58_79+00	PCC	ORIGINAL	DC-8	6000	E-7		P-209		9.00	.00		15.00	0	.00	40.00	19.00	24.00	I		A			
IAD	19L/111+00+145+00	PCC	RECONSTRUCTED		0					.00	.00		.00	0	.00	.00	.00	.00						
IAD	19L/111+00_145+00				0					.00	.00		.00	0	.00	.00	.00	.00						
IAD	1L-19R/30+00_56+00				0					.00	.00		.00	0	.00	.00	.00	.00						
IAD	1R-19L/30+00_64+00	PCC	ORIGINAL		0					.00	.00		.00	0	.00	.00	.00	.00						
IAD	1R/19L/30+00_64+00	PCC	ORIGINAL		0					.00	.00		.00	0	.00	.00	.00	.00						
LGB	12-30/ALL	ACC	OVERLAYED	B-727-200	3	E-6	F4			.00	.00		3.00	10	.00	22.75	5.30	.00						
MSN	101	ACC	ORIGINAL		3	E-10		P-201		5.00	.00		16.00	0	.00	.00	.00	.00						
MSN	13-31/0+00_58+46	ACC	OVERLAYED	B-727-100	0			P-209	P-154	10.00	27.00		.00	0	.00	.00	.00	.00						
MSN	1702	ACC	ORIGINAL		9	E-10		P-209		11.00	.00		4.00	0	.00	.00	.00	.00						
MSN	1705	ACC	OVERLAYED		0			P-209		6.00	.00		1.25	0	.00	.00	.00	.00						
MSN	2302	ACC	OVERLAYED		0	E-10		P-209	P-154	12.00	11.50		2.50	0	.00	.00	.00	.00						
MSN	2502	ACC	OVERLAYED		0	E-10		P-209	P-154	12.00	24.00		3.50	0	.00	.00	.00	.00						
MSN	2601	ACC	OVERLAYED		0	E-9		P-209	P-154	6.00	21.00		2.50	0	.00	.00	.00	.00						
MSN	2603	ACC	OVERLAYED		0	E-10		P-209	P-154	6.00	11.50		2.50	0	.00	.00	.00	.00						
MSN	301	ACC	OVERLAYED		0	E-10		P-209	P-154	9.00	18.00		3.00	0	.00	.00	.00	.00						
MSN	402	ACC	OVERLAYED		0	E-10		P-209	P-154	8.00	12.00		3.00	0	.00	.00	.00	.00						
MSN	701	ACC	OVERLAYED		0	E-10		P-209		8.00	.00		3.00	0	.00	.00	.00	.00						
PHX	8/8-1_8-2	ACC	ORIGINAL	DC-8	0	E-6	FA	P-209	P-154	10.50	24.00		6.00	15	.00	41.00	16.00	.00						
CYS	12-30/ALL	COMPOSITE	RECONSTRUCTED		0					.00	.00		10.00	0	.00	.00	.00	.00						SEE GENERAL
CLT	18R-36L/32+00_132+00	PCC	ORIGINAL	DC-8	26822	E-9		P-304		8.00	.00		15.00	0	125.00	.00	.00	.00			C			
CTL	18R-36L/32+00_132+00				0					.00	.00		.00	U	.00	.00	.00	.00						
DFW	TWJ-8	PCC	ORIGINAL		0	CW			P-155	.00	9.00		18.00	0	.00	.00	.00	.00			B			
DFW	TWK-11	PCC	ORIGINAL		0	CW			P-155	.00	9.00		18.00	0	.00	.00	.00	.00			B			
DFW	TWK51-14	PCC	ORIGINAL		0	CW			P-155	.00	9.00		18.00	0	.00	.00	.00	.00			B			
ALL	9L/27R_81	PCC	OVERLAYED		0	E-1	F1	P-211		8.00	.00		2.00	0	.00	.00	.00	.00						
FLL	TW/A	PCC	OVERLAYED		0	E-1	F1	P-211		9.00	.00		3.00	0	.00	.00	.00	.00						
MKE	104	PCC	OVERLAYED		0	E-7			P-154	.00	12.00		12.00	0	.00	.00	.00	.00						
MKE	109	PCC	OVERLAYED		0	E-7		P-201		8.00	8.00		16.00	0	.00	.00	.00	.00						
MKE	2307	PCC	OVERLAYED		0	E-7				.00	.00		16.00	0	.00	.00	.00	.00						
MKE	2308	PCC	OVERLAYED		0	E-7				.00	.00		16.00	0	.00	.00	.00	.00						
MKE	2407	PCC	OVERLAYED		0	E-7		P-209		7.00	.00		4.00	0	.00	.00	.00	.00						
MKE	2408	PCC	OVERLAYED		0	E-7		P-209		7.00	.00		4.00	0	.00	.00	.00	.00						
MKE	2409	PCC	OVERLAYED		0	E-7		P-209	P-154	8.00	10.00		2.50	0	.00	.00	.00	.00						
MKE	2501	PCC	OVERLAYED		0	E-7			P-154	.00	8.00		11.00	0	.00	.00	.00	.00						
MKE	2502	PCC	OVERLAYED		0	E-7			P-154	.00	8.00		11.00	0	.00	.00	.00	.00						
MKE	2507	PCC	OVERLAYED		0	E-7				.00	.00		16.00	0	.00	.00	.00	.00						

DESIGN REPORT

AIR_ID	PAVE_ID	PAVE_COMP	PAVE_TYPE	DSN_ACT	EQU_DEP	SB_GRD_SOIL	SB_GRD_CLASS	BASE_SPEC	SB_BASE_SPEC	BASE_TH	SB_BASE_TH	NUM	FAC_TH	CBR	E_VALUE	LRD_LIMIT	PLASTI_NDX	MOIST_CONT	CEMENTI	REINFORCE	JT	_DESIGNT	JT_SEALANT	ADDITIVES
[illegible]	2508	PCC	OVERLAYED		0	E-7				.00	.00		16.00	0	.00	.00	.00	.00						
[illegible]	2604	PCC	OVERLAYED		0	E-7			P-154	.00	12.00		12.00	0	.00	.00	.00	.00						
JFK	TW-J	ACC	ORIGINAL		0					.00	.00		.00	0	.00	.00	.00	.00						
JFK	TW-K	ACC	ORIGINAL		0					.00	.00		.00	0	.00	.00	.00	.00						
JFK	TW-Q	ACC	ORIGINAL		0					.00	.00		.00	0	.00	.00	.00	.00						
JFK	TW-P	ACC	ORIGINAL		0					.00	.00		.00	0	.00	.00	.00	.00						
LGE	101	ACC	OVERLAYED		0	E-3		P-209		9.00	.00		3.00	0	.00	.00	.00	.00						
LGE	201	ACC	OVERLAYED		0	E-3		P-209		9.00	.00		5.00	0	.00	.00	.00	.00						
LGE	2403	ACC	OVERLAYED		0	E-3		P-209		9.00	.00		2.00	0	.00	.00	.00	.00						
LGE	2404	ACC	OVERLAYED		0	E-3		P-209		9.00	.00		2.00	0	.00	.00	.00	.00						
LGE	2503	ACC	OVERLAYED		0	E-3		P-209		9.00	.00		2.00	0	.00	.00	.00	.00						
LGE	2504	ACC	OVERLAYED		0	E-3		P-209		9.00	.00		3.00	0	.00	.00	.00	.00						
LGE	2603	ACC	OVERLAYED		0	E-3		P-209		8.00	.00		2.00	0	.00	.00	.00	.00						
LGE	2604	ACC	OVERLAYED		0	E-3		P-209		8.00	.00		2.00	0	.00	.00	.00	.00						
LGE	301	ACC	OVERLAYED		0	E-3		P-209		9.00	.00		2.00	0	.00	.00	.00	.00						
LGE	306	ACC	OVERLAYED		0	E-3		P-209		8.00	.00		5.00	0	.00	.00	.00	.00						
[illegible]	1504	ACC	ORIGINAL		0	E-7				.00	.00		.00	0	.00	.00	.00	.00						
[illegible]	1602	PCC	ORIGINAL		0	E-7				.00	.00		.00	0	.00	.00	.00	.00						
[illegible]	1604	PCC	ORIGINAL		0	E-7				.00	.00		.00	0	.00	.00	.00	.00						
[illegible]	1801	PCC	ORIGINAL		0	E-7		P-209		12.00	.00		4.00	0	.00	.00	.00	.00						
[illegible]	1802	PCC	ORIGINAL		0	E-7		P-209		12.00	.00		4.00	0	.00	.00	.00	.00						
[illegible]	201	PCC	OVERLAYED		0	E-7				.00	.00		.00	0	.00	.00	.00	.00						
[illegible]	2601	PCC	OVERLAYED		0	E-7				.00	.00		.00	0	.00	.00	.00	.00						
[illegible]	301	PCC	ORIGINAL		0	E-7		P-201	P-155	4.00	10.00		16.00	0	.00	.00	.00	.00						
[illegible]	403	PCC	OVERLAYED		0	E-7				.00	.00		.00	0	.00	.00	.00	.00						
[illegible]	501	PCC	OVERLAYED		0	E-7		P-201		1.00	.00		.00	0	.00	.00	.00	.00						
SAN	9-27/0+00_87+00	PCC	OVERLAYED	DC-10	0	E-4				.00	.00		8.00	0	300.00	.00	.00	.00						
SFI	12-30	PCC	OVERLAYED	B-727-200	0			P-201	P-154	4.00	7.00		1.50	0	.00	.00	.00	.00						
PIA	12/30	PCC	OVERLAYED	B-727-200	0	RL		P-209		5.00	.00		3.00	4	.00	.00	.00	.00						
PWA	RW 4-22	PCC	OVERLAYED	B-727-200	763	6				.00	.00		13.00	3	100.00	.00	.00	.00						
RFD	8-24/28+30_46+63	PCC	OVERLAYED	B-727-200	300	0		P-209	P-154	9.00	12.00		8.25	10	.00	.00	.00	.00						
RFD	8-24/46+00_28+30	PCC	OVERLAYED	B-727-200	300	0		P-209	P-154	8.63	12.00		5.25	10	.00	.00	.00	.00						
RDM	13R-31L/0+00_50+00	PCC	OVERLAYED		720	0		P-201	P-154	6.00	6.00		10.00	4	.00	.00	.00	.00						
RDM	13R-31L/50+00_62+63	PCC	OVERLAYED	B-727-200	300	0		P-201	P-154	6.00	6.00		15.00		.00	.00	.00	.00						
ORD	RW 23	PCC	ORIGINAL	DC-9	120	0		P-201	P-208	4.00	6.00		11.00		10.00	.00	.00	.00						
ORD	TW/A	PCC	ORIGINAL		0			P-209	P-154	6.00	19.00		4.00		.00	.00	.00	.00						
IAD	4L-22R	PCC	OVERLAYED	DC-10	0	E-6		P-201		2.50	.00		4.00		.00	.00	.00	.00						
ABY	2/20	PCC	OVERLAYED	B-737	0	E-7		P-208	P-154	5.00	5.00		5.00		.00	.00	.00	.00						
CAE	5/23	PCC	OVERLAYED	OTHER	300	0	RW	F2	P-209	P-206	8.00	12.00		3.00		-0.99	12.00	12.10	12.00	IA	4497	P		RBM SEAL	ADDITIVE
[illegible]	RW 17L-35R	PCC	ORIGINAL	B-727-200	0	E-2				.00	.00		16.00		.00	.00	.00	.00						

MAINTENANCE REPORT

AIR_ID	PAVE_ID	PAVE_COND	PCI	DT_CONS	DT_MAINT	DT_REHAB	PAVE_MAINT1	DRAINAGE	FROST_PROTEC	WATER_TABL
ACY	R/W4-22/29+19_61+44	EXCELLENT	99.99	85/01/01	88/11/01	87/09/03	CRACK FILLING	ADEQUATE	CP	LOW
ATL	SL 26R/C+CC_90+00	EXCELLENT	95.00	84/01/09	88/07/03	88/07/03	CORNER BREAK	ADEQUATE	LSP	HIGH
ATL	E/FF_26L	VERY GOOD	79.30	69/01/01	88/01/01	74/10/28	JOINT REPAIR	ADEQUATE	LSP	HIGH
ATL	RW/8R-26L	GOOD	75.00	75/01/01	85/09/01	80/05/09	JOINT REPAIR	ADEQUATE	LSP	LOW
ATL	TW/E(13)	EXCELLENT	93.00	75/01/01	88/09/09	82/01/01	JOINT REPAIR	ADEQUATE	LSP	HIGH
ATL	TW/L(2)	GOOD	80.00	75/01/01	86/07/11	81/11/30	JOINT REPAIR	ADEQUATE	LSP	LOW
ATL	TW/L(3)	GOOD	66.00	75/01/01	82/01/01	77/08/09	JOINT REPAIR	ADEQUATE	LSP	HIGH
ATL	TW/M(6)	GOOD	56.00	75/01/01	83/05/30	76/01/09	JOINT REPAIR	ADEQUATE	LSP	HIGH
ATL	TW/V-V(1)	EXCELLENT	88.00	75/01/01	87/11/28	77/12/25	JOINT REPAIR	ADEQUATE	LSP	LOW
BWI	10-28/5+00_100+00	FAIR	55.00	48/01/08	88/01/01	73/01/13	CRACK FILLING	INADEQUATE	RSP	LOW
DRA	2-20/ALL	VERY GOOD	78.00		00/01/01	77/01/01				LOW
GSP	3-21/5+00_71+00	EXCELLENT	.00	01/01/62	01/01/00	01/01/77	JOINT SEAL	INADEQUATE		
GSP	3-21/71+00_76+00	VERY GOOD	.00	62/01/01			JOINT SEAL	INADEQUATE		
IAD	10L/111+00_145+00	VERY GOOD	82.00	62/01/01			JOINT SEAL	ADEQUATE		
IAD	12-30/29+50_70+00	POOR	36.00	01/01/62	01/01/00	01/01/00	JOINT SEAL	ADEQUATE		
IAD	19L/111+00+145+00	VERY GOOD	82.00				JOINT SEAL	ADEQUATE		
IAD	19L/111+00_145+00		.00					ADEQUATE		
D	1L-19R/30+00_56+00		.00					ADEQUATE		
IAD	1R-19L/30+00_64+00	EXCELLENT	86.00	62/01/01			JOINT SEAL	ADEQUATE		
IAD	1R/19L/30+00_64+00	EXCELLENT	.00	62/01/01				ADEQUATE		
LGB	12-30/ALL	EXCELLENT	94.00	53/01/01	77/01/01	69/01/01		INADEQUATE		
MSN	101	EXCELLENT	88.00	80/01/01	00/01/01					
MSN	13-31/0+00_58+46		.00	00/01/01	00/01/01	72/01/01				
MSN	1702	EXCELLENT	87.00	79/01/01	00/01/01					
MSN	1705	FAIR	48.00	52/01/01	00/01/01	78/01/01				
MSN	2302	VERY GOOD	78.00	42/01/01	00/01/01	80/01/01				
MSN	2502	POOR	30.00	42/01/01	00/01/01	72/01/01				
MSN	2601	FAIR	46.00	58/01/01	00/01/01	73/01/01				
MSN	2603	VERY GOOD	77.00	42/01/01	00/01/01	73/01/01				
MSN	301	VERY GOOD	79.00	64/01/01	00/01/01	79/01/01				
MSN	402	GOOD	65.00	53/01/01	00/01/01	80/01/01				
MSN	701	POOR	29.00	56/01/01	00/01/01	73/01/01				
PHX	8/8-1_8-2	FAIR	43.00	80/01/01	00/01/01	00/01/01		ADEQUATE		LOW
CYS	12-30/ALL	EXCELLENT	.00	42/01/01	85/01/01	85/01/01				
CLT	18R-36L/32+00_132+00	EXCELLENT	.00	79/01/01	00/01/01	00/01/01	JOINT SEAL	INADEQUATE		LOW
CTL	18R-36L/32+00_132+00		.00							
DFW	TWJ-8	GOOD	72.00	74/01/01	00/01/01	00/01/01	PATCHING	ADEQUATE		
DFW	TWK-11	GOOD	78.00	74/01/01	00/01/01	00/01/01	PATCHING	ADEQUATE		
DFW	TWW31-14	VERY GOOD	82.00	74/01/01	00/01/01	00/01/01	PATCHING	ADEQUATE		
FLL	9L/27R_R1	VERY GOOD	71.00	63/01/01	00/01/01	74/01/01				
FLL	TW/A	VERY GOOD	80.00	63/01/01	00/01/01	74/01/01				
MKE	104	EXCELLENT	79.00	47/01/01	00/01/01	78/01/01				
MKE	109	VERY GOOD	72.00	74/01/01	00/01/01					
MKE	2307	VERY GOOD	72.00	70/01/01	00/01/01					
MKE	2308	GOOD	67.00	70/01/01	00/01/01					
MKE	2407	VERY GOOD	83.00	41/01/01	00/01/01	77/01/01				
MKE	2408	VERY GOOD	79.00	41/01/01	00/01/01	77/01/01				
MKE	2409	EXCELLENT	88.00	45/01/01	00/01/01	77/01/01				
MKE	2501	VERY GOOD	80.00	64/01/01	00/01/01	74/01/01				
MKE	2502	EXCELLENT	89.00	64/01/01	00/01/01	74/01/01				
MKE	2507	FAIR	47.00	70/01/01	00/01/01					

MAINTENANCE REPORT

AIR_ID	PAVE_ID	PAVE_COND	PCI	DT_CONS	DT_MAINT	DT_REHAB	PAVE_MAINT1	DRAINAGE	FROST_PROTEC	WATER_TABL
MKE	2508	GOOD	64.00	70/01/01	00/01/01					
MKE	2604	VERY GOOD	81.00	47/01/01	00/01/01	75/01/01				
JFK	TW-J	EXCELLENT	92.00	79/01/01	00/01/01	00/01/01				
JFK	TW-K	FAIR	50.00	71/01/01	00/01/01	00/01/01				
JFK	TW-O	GOOD	75.00	65/01/01	00/01/01	00/01/01				
JFK	TW-P	VERY POOR	36.00	62/01/01	00/01/01	00/01/01				
LSE	101	VERY GOOD	79.00	44/01/01	00/01/01	78/01/01				
LSE	201	VERY GOOD	75.00	44/01/01	00/01/01	80/01/01				
LSE	2403	VERY GOOD	83.00	44/01/01	00/01/01	80/01/01				
LSE	2404	VERY GOOD	84.00	44/01/01	00/01/01	80/01/01				
LSE	2503	VERY GOOD	83.00	44/01/01	00/01/01	78/01/01				
LSE	2504	VERY GOOD	80.00	44/01/01	00/01/01	78/01/01				
LSE	2603	EXCELLENT	87.00	68/01/01	00/01/01	78/01/01				
LSE	2604	VERY GOOD	84.00	68/01/01	00/01/01	78/01/01				
LSE	301	VERY GOOD	80.00	44/01/01	00/01/01	80/01/01				
LSE	304	VERY GOOD	85.00	44/01/01	00/01/01	78/01/01				
GRB	1504	VERY POOR	19.00	48/01/01	00/01/01	00/01/01				
GRB	1602	FAIR	27.00	84/01/01						
GRB	1604	VERY POOR	25.00	77/01/01						
GRB	1801	VERY GOOD	84.00	80/01/01						
GRB	1802	EXCELLENT	90.00	82/01/01						
GRB	201	VERY GOOD	83.00	48/01/01		82/01/01				
GRB	2601	GOOD	69.00	48/01/01		72/01/01				
GRB	301	EXCELLENT	95.00	82/01/01						
GRB	403	FAIR	59.00	66/01/01	00/01/01	78/01/01				
GRB	501	FAIR	39.00	48/01/01	00/01/01	75/01/01				
SAN	9-27/0=00_87+00	EXCELLENT	94.00	44/01/01		80/01/01		INADEQUATE		HIGH
SPI	12-30	FAIR	.00	47/01/01	00/01/01	82/01/01	JOINT SEAL			
PIA	12/30	EXCELLENT	90.00	81/01/01	00/01/01	00/01/01				
FWA	RW 4-22		.00	68/08/01	00/01/01	74/09/01				
RFD	6-24/28+30_46+63	GOOD	70.00							
RFD	6-24/6+00_28+30	GOOD	70.00							
MDW	13R-31L/0+00_50+00		.00	00/01/01	00/01/01	00/01/01		INADEQUATE		
MDW	13R-31L/50+00_62+63		.00	00/01/01	00/01/01	00/01/01		INADEQUATE		
ORD	RW 23	EXCELLENT	90.00	82/01/01						
ORD	TW/A	GOOD	70.00	67/01/01						
IND	4L-22R	POOR	39.00	56/01/01		77/01/01		INADEQUATE		
ZDV	2/20		.00	51/01/01	00/01/01	76/01/01				
CAE	5/23	POOR	15.00	41/01/01	88/01/01	65/01/01	CRACK FILLING	INADEQUATE	RSS	LOW
DEN	RW 17L-35R	GOOD	67.00	75/01/01			JOINT SEAL	ADEQUATE		

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REPORT ON USER SELECTED FIELDS

AIR_ID	PAVE_ID	REGION	TMAX	TMIN	PAVE_COMP	PAVE_TYPE	PCI	DT_CONS	PAVE_MAINT1	DSN_MTH	S_03	S_05	S_06	S_20	S_24
ACY	R/W4-22/29+19_61+44	EASTERN	106	-11	PCC	ORIGINAL	99.99	85/01/01	CRACK FILLING	AC 150/5320-6C	0	0	0	0	0
ATL	8L-26R/0+00_90+00	SOUTHERN	105	-5	PCC	ORIGINAL	95.00	84/01/09	CORNER BREAK	AC 150/5320-6C	0	0	0	0	0
ATL	E/FF_26L	SOUTHERN	105	-5	PCC	ORIGINAL	79.30	69/01/01	JOINT REPAIR	AC 150/5320-6B	0	1	1	0	0
ATL	RW/8R-26L	SOUTHERN	105	-5	PCC	ORIGINAL	75.00	75/01/01	JOINT REPAIR	AC 150/5320-6A	0	0	0	0	0
ATL	TW/E(13)	SOUTHERN	105	-5	PCC	ORIGINAL	93.00	75/01/01	JOINT REPAIR	AC 150/5320-6A	0	0	0	0	0
ATL	TW/L(2)	SOUTHERN	105	-5	PCC	ORIGINAL	80.00	75/01/01	JOINT REPAIR	AC 150/5320-6C	0	0	0	0	0
ATL	TW/L(3)	SOUTHERN	105	-5	PCC	ORIGINAL	66.00	75/01/01	JOINT REPAIR	OTHER	0	0	0	0	0
ATL	TW/M(6)	SOUTHERN	105	-5	PCC	ORIGINAL	56.00	75/01/01	JOINT REPAIR	OTHER	0	0	0	0	0
ATL	TW/V-V(1)	SOUTHERN	105	-5	PCC	ORIGINAL	88.00	75/01/01	JOINT REPAIR	AC 150/5320-6C	0	0	0	0	0
BWI	10-28/5+00_100+00	EASTERN	105	-7	ACC	OVERLAYED	55.00	48/01/08	CRACK FILLING	AC 150/5320-6C	1	0	0	0	0
DRA	2-20/ALL	NORTHWEST MOUNTAIN	93	-30	ACC	RECONSTRUCTED	78.00				0	0	0	0	0
GSP	3-21/5+00_71+00	SOUTHERN	103	-6	ACC	ORIGINAL	.00	01/01/62	JOINT SEAL	AC 150/5320-6B	1	0	0	0	0
GSP	3-21/71+00_76+00	SOUTHERN	103	-6	PCC	ORIGINAL	.00	62/01/01	JOINT SEAL		1	1	0	0	0
IAD	10L/111+00_145+00	EASTERN	104	-18	PCC	ORIGINAL	82.00	62/01/01	JOINT SEAL		0	0	0	0	0
IAD	12-30/29+50_70+00	EASTERN	104	-18	PCC	ORIGINAL	36.00	01/01/62	JOINT SEAL	OTHER	1	1	1	0	0
IAD	19L/111+00+145+00	EASTERN	104	-18	PCC	RECONSTRUCTED	82.00		JOINT SEAL		0	0	0	0	0
IAD	19L/111+00_145+00	EASTERN	104	-18			.00				1	1	1	0	0
IAD	1L-19R/30+00_56+00	EASTERN	104	-18			.00				1	0	0	0	0
IAD	1R-19L/30+00_64+00	EASTERN	104	-18	PCC	ORIGINAL	86.00	62/01/01	JOINT SEAL		0	0	0	0	0
IAD	1R/19L/30+00_64+00	EASTERN	104	-18	PCC	ORIGINAL	.00	62/01/01			1	1	1	0	0
LGB	12-30/ALL	WESTERN PACIFIC	111	25	ACC	OVERLAYED	94.00	53/01/01		AC 150/5320-6B	0	0	0	0	0
MSN	101	GREAT LAKES	104	-37	ACC	ORIGINAL	88.00	80/01/01			0	4	1	0	0
MSN	13-31/0+00_58+46	GREAT LAKES	104	-37	ACC	OVERLAYED	.00	00/01/01			0	0	0	0	0
MSN	1702	GREAT LAKES	104	-37	ACC	ORIGINAL	87.00	79/01/01			4	0	0	0	1
MSN	1705	GREAT LAKES	104	-37	ACC	OVERLAYED	48.00	52/01/01			4	0	0	0	1
MSN	2302	GREAT LAKES	104	-37	ACC	OVERLAYED	78.00	42/01/01			4	0	0	0	4
MSN	2502	GREAT LAKES	104	-37	ACC	OVERLAYED	30.00	42/01/01			4	0	0	0	1
MSN	2601	GREAT LAKES	104	-37	ACC	OVERLAYED	46.00	58/01/01			4	0	0	0	4
MSN	2603	GREAT LAKES	104	-37	ACC	OVERLAYED	77.00	42/01/01			0	4	1	0	0
MSN	301	GREAT LAKES	104	-37	ACC	OVERLAYED	79.00	64/01/01			4	0	0	0	4
MSN	402	GREAT LAKES	104	-37	ACC	OVERLAYED	65.00	53/01/01			4	0	0	0	4
MSN	701	GREAT LAKES	104	-37	ACC	OVERLAYED	29.00	56/01/01			4	0	0	0	7
PHX	8/8-1_8-2	WESTERN PACIFIC	118	17	ACC	ORIGINAL	43.00	80/01/01		AIM	1	0	0	0	0
CYS	12-30/ALL	NORTHWEST MOUNTAIN	100	-34	COMPOSITE	RECONSTRUCTED	.00	42/01/01			0	0	0	0	0
CLT	18R-36L/32+00_132+00	EASTERN	104	-3	PCC	ORIGINAL	.00	79/01/01	JOINT SEAL	AC 150/5320-6A	0	0	0	0	0
CTL	18R-36L/32+00_132+00		0	0			.00				0	2	0	0	0
DFW	TWJ-8	SOUTHWEST	113	4	PCC	ORIGINAL	72.00	74/01/01	PATCHING		0	1	4	0	0
DFW	TWK-11	SOUTHWEST	113	4	PCC	ORIGINAL	78.00	74/01/01	PATCHING		0	1	1	0	0
DFW	TWW31-14	SOUTHWEST	113	4	PCC	ORIGINAL	82.00	74/01/01	PATCHING		0	1	7	0	0
FLL	9L/27R_R1	SOUTHERN	98	31	PCC	OVERLAYED	71.00	63/01/01			4	0	0	0	0
FLL	TW/A	SOUTHERN	98	31	PCC	OVERLAYED	80.00	63/01/01			4	0	0	0	1
MKE	104	GREAT LAKES	101	-26	PCC	OVERLAYED	79.00	47/01/01			0	7	1	0	0
MKE	109	GREAT LAKES	101	-26	PCC	OVERLAYED	72.00	74/01/01			1	2	7	0	0
MKE	2307	GREAT LAKES	101	-26	PCC	OVERLAYED	72.00	70/01/01			4	4	1	0	0
MKE	2308	GREAT LAKES	101	-26	PCC	OVERLAYED	67.00	70/01/01			4	4	1	0	0
MKE	2407	GREAT LAKES	101	-26	PCC	OVERLAYED	83.00	41/01/01			0	0	0	0	0
MKE	2408	GREAT LAKES	101	-26	PCC	OVERLAYED	79.00	41/01/01			0	1	0	0	0
MKE	2409	GREAT LAKES	101	-26	PCC	OVERLAYED	88.00	45/01/01			0	0	0	0	0
MKE	2501	GREAT LAKES	101	-26	PCC	OVERLAYED	80.00	64/01/01			4	6	7	0	0
MKE	2502	GREAT LAKES	101	-26	PCC	OVERLAYED	89.00	64/01/01			4	7	4	0	0
MKE	2507	GREAT LAKES	101	-26	PCC	OVERLAYED	47.00	70/01/01			6	3	5	0	0

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REPORT ON USER SELECTED FIELDS

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AIR_ID	PAVE_ID	REGION	TMAX	TMIN	PAVE_COMP	PAVE_TYPE	PCI	DT_CONS	PAVE_MAINT1	DSN_MTH	S_03	S_05	S_06	S_20	S_24
MKE	2508	GREAT LAKES	101	-26	PCC	OVERLAYED	64.00	70/01/01			1	6	4	0	0
MKE	2604	GREAT LAKES	101	-26	PCC	OVERLAYED	81.00	47/01/01			0	0	1	0	0
JFK	TW-J	EASTERN	104	-2	ACC	ORIGINAL	92.00	79/01/01			1	0	0	0	0
JFK	TW-K	EASTERN	104	-2	ACC	ORIGINAL	50.00	71/01/01			4	0	4	0	0
JFK	TW-O	EASTERN	104	-2	ACC	ORIGINAL	76.00	65/01/01			4	0	4	0	0
JFK	TW-P	EASTERN	104	-2	ACC	ORIGINAL	36.00	62/01/01			0	0	4	0	0
LSE	101	GREAT LAKES	104	-37	ACC	OVERLAYED	79.00	44/01/01			4	0	0	0	1
LSE	201	GREAT LAKES	104	-37	ACC	OVERLAYED	75.00	44/01/01			4	0	0	0	1
LSE	2403	GREAT LAKES	104	-37	ACC	OVERLAYED	83.00	44/01/01			4	0	0	0	1
LSE	2404	GREAT LAKES	104	-37	ACC	OVERLAYED	84.00	44/01/01			4	0	0	0	1
LSE	2503	GREAT LAKES	104	-37	ACC	OVERLAYED	83.00	44/01/01			4	0	1	0	1
LSE	2504	GREAT LAKES	104	-37	ACC	OVERLAYED	80.00	44/01/01			4	0	0	0	1
LSE	2603	GREAT LAKES	104	-37	ACC	OVERLAYED	87.00	68/01/01			4	0	0	0	1
LSE	2604	GREAT LAKES	104	-37	ACC	OVERLAYED	84.00	68/01/01			4	0	0	0	1
LSE	301	GREAT LAKES	104	-37	ACC	OVERLAYED	80.00	44/01/01			4	0	0	0	1
LSE	304	GREAT LAKES	104	-37	ACC	OVERLAYED	85.00	44/01/01			4	0	0	0	1
GRB	1504	GREAT LAKES	99	-31	ACC	ORIGINAL	19.00	48/01/01			4	0	0	0	4
GRB	1602	GREAT LAKES	99	-31	PCC	ORIGINAL	27.00	84/01/01			4	2	0	0	0
GRB	1604	GREAT LAKES	99	-31	PCC	ORIGINAL	25.00	77/01/01			4	0	4	0	4
GRB	1801	GREAT LAKES	99	-31	PCC	ORIGINAL	84.00	80/01/01			7	0	0	0	1
GRB	1802	GREAT LAKES	99	-31	PCC	ORIGINAL	90.00	82/01/01			4	0	0	0	5
GRB	201	GREAT LAKES	99	-31	PCC	OVERLAYED	83.00	48/01/01			1	1	0	0	0
GRB	2601	GREAT LAKES	99	-31	PCC	OVERLAYED	69.00	48/01/01			1	0	0	0	1
GRB	301	GREAT LAKES	99	-31	PCC	ORIGINAL	95.00	82/01/01			4	4	1	0	0
GRB	403	GREAT LAKES	99	-31	PCC	OVERLAYED	59.00	66/01/01			4	1	1	0	0
GRB	501	GREAT LAKES	99	-31	PCC	OVERLAYED	39.00	48/01/01			4	0	4	0	7
SAN	9-27/0+00_87+00	WESTERN PACIFIC	115	29	PCC	OVERLAYED	94.00	44/01/01			1	2	0	0	0
SPI	12-30	GREAT LAKES	112	-22	PCC	OVERLAYED	.00	47/01/01	JOINT SEAL		0	0	0	0	0
PIA	12/30	GREAT LAKES	103	-25	PCC	OVERLAYED	90.00	81/01/01		AC 150/5320-6B	0	0	0	0	0
FWA	RW 4-22	GREAT LAKES	103	-21	PCC	OVERLAYED	.00	68/08/01		AC 150/5320-6C	0	0	0	0	0
RFD	6-24/28+30_46+63	GREAT LAKES	103	-27	PCC	OVERLAYED	70.00				0	0	0	0	0
RFD	6-24/6+00_28+30	GREAT LAKES	103	-27	PCC	OVERLAYED	70.00				0	0	0	0	0
MDW	13R-31L/0+00_50+00	GREAT LAKES	102	-26	PCC	OVERLAYED	.00	00/01/01			0	0	0	0	0
MDW	13R-31L/50+00_62+63	GREAT LAKES	102	-26	PCC	OVERLAYED	.00	00/01/01			0	0	0	0	0
ORD	RW 23	GREAT LAKES	102	-26	PCC	ORIGINAL	90.00	82/01/01			0	0	0	0	0
ORD	TW/A	GREAT LAKES	102	26	PCC	ORIGINAL	70.00	67/01/01		AC 150/5320-6C	0	0	0	0	0
IND	4L-22R	GREAT LAKES	104	-21	PCC	OVERLAYED	39.00	56/01/01			4	0	0	0	0
ZDV	2/20	NORTHWEST MOUNTAIN	105	-23	PCC	OVERLAYED	.00	51/01/01			0	0	0	0	0
CAE	5/23	SOUTHERN	107	4	PCC	OVERLAYED	15.00	41/01/01	CRACK FILLING		0	0	0	0	0
DEN	RW 17L-35R	NORTHWEST MOUNTAIN	104	-30	PCC	ORIGINAL	67.00	75/01/01	JOINT SEAL	OTHER	0	0	0	0	0
										AC 150/5320-6C	0	1	0	0	0